BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program	Rulemaking 11-05-005 (Filed May 5, 2011)

REPLY COMMENTS OF BRIGHTSOURCE ENERGY, INC. ON THE MARCH 26th ASSIGNED COMMISSIONER'S RULING AND THE DRAFT 2014 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLANS

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BrightSource Energy, Inc. ("BrightSource") appreciates this opportunity to provide its reply comments on the March 26, 2014, Assigned Commissioner's Ruling Identifying Issues and Schedule of Review for 2014 Renewables Portfolio Standard Procurement ("RPS") Plans ("ACR") and on the Draft 2014 RPS Plans, in accordance with the revised schedule for comments approved by Administrative Law Judge ("ALJ") DeAngelis on April 16, 2014. BrightSource limits its comments to the integration cost adder discussion, including the questions posed by Energy Division subsequent to parties filing of opening comments.

I.

EVALUATION OF INTRINSIC GENERATOR ATTRIBUTES MAY BE PREFERABLE APPROACH TO CALCULATING INTEGRATION COST ADDERS

BrightSource is very supportive of the interest of the California Public Utilities Commission (the "Commission") in implementing an integration cost adder. However, the opening comments make clear that in undertaking this effort, it must be recognized that calculating integration costs over the horizon of a contract's life with historic market prices and costs will be impossible to do with any reliable approximation of accuracy. Production cost

modeling, which is often used for projecting energy costs, would not only be extremely cumbersome and expensive for all stakeholders, but also would be highly sensitive to multiple-year future state portfolio assumptions, which are and should be subject to change. Given these complexities and challenges, BrightSource strongly urges the consideration of integration cost evaluation based on the intrinsic attributes of generators, such as the extent to which a generator either requires or provides supporting Regulation reserves, causes or ameliorates Flexible Ramping events, helps to meet, defer or avoid Flexible Capacity Resource Adequacy or Long-Term Procurement Plan ("LTPP") flexibility requirements or is likely to increase the need for those requirements, and any other components as determined by the Commission. The use of integration cost adders should be only for bid-evaluation, and so the primary purpose of such a value is for relative comparison of bid offers. Relative scoring of these intrinsic attributes could be applied as premium or discount factors to the energy or capacity value, as appropriate for the attribute, of each generator bid. This type of approach would prove as appropriate and reasonable indicators, as well as far less complex and expensive than other approaches to assigning integration cost adders. Such an approach would contribute similarly or better to procurement and delivery of an overall least cost, reliable energy supply.

II.

RESPONSES TO INTEGRATION COST ADDER QUESTIONS POSED BY THE ENERGY DIVISION

BrightSource Energy is pleased to provide the following responses to the questions posed by the Energy Division.

1. *There is general consensus among parties that an integration adder should be dynamic, updated frequently and differ based on technology and location. Furthermore, most parties agree that an adder should only include the indirect costs associated with integrating variable energy resources such as costs*

associated with regulation, ramping and cycling. If this is the case, should the term "integration adder" be changed to reflect these agreed upon attributes if what ends up being calculated are unique costs for each technology based on changes in electrical systems' portfolio mixes over time? What is your recommendation and what standard "term" and "definition" do you believe the CPUC should adopt?

The analysis of integration costs should not be limited to variable energy resources, but broadened to include all bidding resources (conventional and renewable), including baseload resources. With respect to the necessary considerations for assigning an applicable integration cost adder, "location" *per se* may not be an essential element. The need for a location-specific component of an adder may relate to resource characteristics based on its generic location, such as generation shape and volatility.

Because the term integration adder is commonly used and "integration cost" has often been referred to in proposed legislation, the Least-Cost, Best-Fit ("LCBF") category for these costs can still be deemed "integration costs." The Commission could codify new terms for the components that comprise integration costs.

2. *If integration adders were developed in the LTPP Proceeding, would updating the adders best be achieved by including that as part of the biennial LTPP process? If not, what frequency and manner would be ideal? How would those results be introduced into the LTPP record?*

The LTPP may or may not be the appropriate venue for integration cost adder determinations; however, a biennial frequency for any major revisions to methodology or quantitative assumptions is appropriate. The precise frequency should rely on the party calculating the integration cost adder. As discussed in subsequent responses, any integration cost analysis on the part of Energy Division could be performed biennially, but if historic market data are a component of a calculation, these values should be updated more frequently. For Load Serving Entities calculating integration costs, then these assumptions, methods and values should be updated as part of procurement solicitation plan filings.

3. *Three general approaches to calculating integration adders were identified by parties – 1) using values from publicly available studies, 2) using market-based cost data from CAISO's regulation and upcoming flexible capacity markets, and 3) using the operational flexibility studies currently scoped in the LTPP proceeding to inform the development of integration adders. Please comment on the advantages and disadvantages of each approach and recommend a procedural framework for implementing your preferred approach. If your recommended framework utilizes more than one approach please be specific regarding the procedural steps and timeline that the CPUC should follow in developing integration adders.*

BrightSource proposes that the Commission use the best information available at the relevant time, which may be a combination of the three sources. Publicly available studies, however, would have to be California-specific or address geographic-agnostic issues, such as studies of intrinsic attributes of generator types.

4. *Do you think it is important for the Commission to determine a methodology for the development of integration adders as well as calculate the values to be used in LCBF? Or is it more appropriate that the IOUs be responsible for calculating integration cost adders based on the methodology developed by the CPUC? Please recommend your preferred approach by weighing the strengths and weaknesses of allowing for IOU-based values. In considering your recommendation, how important is it that the values calculated be verifiable by parties?*

The Energy Division should develop a range of acceptable integration cost values (or relativities) based on a stakeholder-vetted, Commission-approved methodology. This would establish the range within Load Serving Entities would be authorized to calculate bid-specific integration costs. This approach would be more appropriate than specific values applied universally to all Load Serving Entities. Each Load Serving Entity possesses a unique portfolio, which collectively will contribute to or reduce overall integration costs, and has its own perspective on future market conditions and generator-specific integration attributes.

5. *Do you think it is important for the CPUC to adopt a methodology to calculate integration adders in time for the 2014 RPS Solicitation beginning in early 2015? If so, can any of the three general approaches mentioned in Question 3 meet this objective while also providing reasonable and defensible cost estimates? In addition, do you*

believe integration adders, if calculated using one of the three approaches, will be significant enough to alter procurement decisions?

The interest of the Commission should be to put into place the framework for assigning integration costs as an effective market signal to developers and utilities. Expedient resolution is most desirable, but this should not be at the expense of appropriate record development. Even if it is not reasonable to anticipate use of integration cost adders in the 2014 RPS Solicitation cycle, this should not discourage starting the necessary stakeholder process now.

6. *In its comments, PG&E provided a framework for calculating integration adders using production cost modeling. If parties agree that production cost modeling should be utilized to determine the costs associated with integrating renewables, do you agree with the framework that PG&E has proposed? Are there any modifications to the framework that you would make? If so, provide a modified framework in your response.*

The approaches outlined by Pacific Gas & Electric Company ("PG&E") and California Wind Energy Association ("CalWEA") each have merit and would contribute to the record development necessary to establish an integration cost framework. As proposed above, PG&E should be allowed to implement its calculation approach for application on bids received, as long as the values (or factors) produced are within the CPUC approved range. BrightSource would support workshops being held in 2014 to consider and discuss all credible, data supported proposals.

7. *Integration costs may rise as the saturation level of renewable resources increases over time. If production cost modeling is used to assist in developing integration adders, what level of renewable saturation should be assumed and what is your rationale?*

Higher levels of renewables should be contemplated as part of the range of acceptable values proposed by Energy Division. The use of higher renewable level assumptions in estimating integration costs would have to be supported by the particular Investor-Owned Utility ("IOU") based on its own procurement dynamics and plans as well as state policy. Limiting integration cost analysis to 33% RPS scenarios is not logical because the current procurement

environment has effectively produced a higher than target penetration in 2020 due to a combination of overlapping programs and contract success rates.

8. *In its comments, CalWEA provided a framework for calculating the short-term, medium-term and long-term costs associated with renewable integration. Please comment on the practicality of this framework and whether you think it could meet the objective of developing integration adders that are reasonable and defensible. What refinements need to be made to the proposed framework for it to achieve the stated objectives?*

The CalWEA approach may very well contribute to establishing a range of values as well as an approach that could be utilized by an IOU, as discussed above.

III.

ADDITIONAL REPLY COMMENTS ON POTENTIAL FOR INTEGRATION "BENEFIT" ADDER

BrightSource notes, in response to the opening comments, that constructing a least-cost portfolio under high renewables scenarios will also require the Commission to consider the ability of bidding resources to provide integration services, or integration benefits. This would not only avoid unnecessary procurement, but also send an economic signal to the market to develop and offer those attributes. BrightSource recommends the consideration of these integration benefits, or counter-integration costs, as part of this integration cost examination. This approach may be appropriate in light of the challenges associated with the assignment of integration costs related to new flexible capacity procurement needs identified in Commission proceedings, such as LTPP. It would be difficult, if not impossible, to assign integration costs fairly to prospective generators before *as well as* after procurement is identified. Future renewable resources may and should help to avoid or defer new capacity procurement explicitly to provide integration and other flexible services. If a new resource is procured to meet multiple purposes, including providing integration services in the wholesale market, this value could and

should be valued and attributed during the bid process, and potentially addressed within this integration cost adder framework.

IV.

CONCLUSION

BrightSource appreciates this opportunity to provide its reply comments on integration adders, a topic that is of increasing importance to California's energy supply. A search for perfect answers will likely add delay and expense to an issue that California can start to address now, by estimating the relative degree to which energy sources (renewable or otherwise) exacerbate or ameliorate integration challenges. We urge the Commission to adopt measures that reflect relative contributions to reliability and ratepayer value in procurement, and welcome the opportunity to work with the Commission and all stakeholders in this regard.

Dated: July 30, 2014

Respectfully Submitted,

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VERIFICATION

I, David Schlosberg, am the Senior Manager for Regulatory & Market Affairs for BrightSource Energy, Inc. I am authorized to make this Verification on its behalf. I declare that the statements in the foregoing copy of *Comments of Brightsource Energy, Inc. on the March 26th Assigned Commissioner's Ruling and the Draft 2014 Renewables Portfolio Standard Procurement Plans* are true of my own knowledge, except as to the matters which are therein stated on information and belief, and as to those matters I believe them to be true.

I declare *under* penalty of perjury that the foregoing is true and correct. Executed on July 30, 2014, at Oakland, California.

/s/ *David Schlosberg*
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