

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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

**BIOENERGY ASSOCIATION OF CALIFORNIA'S REPLY COMMENTS
ON THE MARCH 26 ASSIGNED COMMISSIONER'S RULING
AND THE DRAFT 2014 RENEWABLES PORTFOLIO STANDARD
PROCUREMENT PLANS**

DATED: July 30, 2014

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The Bioenergy Association of California submits these Reply Comments on the Assigned Commissioner’s Ruling of March 26 and subsequent follow-up questions from Energy Division staff related to a proposed Renewable Integration Adder.¹ The Bioenergy Association of California strongly supports the inclusion of a renewable integration adder with the recommended definitions and qualifications below.

The Bioenergy Association of California (BAC) is an association of more than 50 public agencies, local governments and private companies working to promote sustainable bioenergy development in California. BAC focuses on community-scale generation of electricity and fuels from organic waste, including organic waste diverted from landfills and landfill gas, waste and biogas from wastewater treatment facilities, dairy and other agricultural waste, yard and green waste, forest and wood waste.

¹ Assigned Commissioner’s Ruling Identifying Issues And Schedule Of Review For 2014 Renewables Portfolio Standard Procurement Plans, filed March 26, 2014; email from Jason Simon, CPUC Energy Division, to parties in R.11-05-005, sent July 21, 2014.

According to the California Energy Commission, California can generate as much as 6,800 megawatts² of renewable, baseload electricity from organic waste (biomass and biogas). That energy can be baseload or, if generated from biogas, can provide the same flexibility, load-following and ramping functions as natural gas, and can also be used to provide energy storage.

A. GENERAL COMMENTS

BAC's specific responses to parties' comments on the Assigned Commissioner's Ruling (ACR) and follow-up questions posed by Commission staff are in Section B below. In general, BAC recommends:

- An integration adder is important to account for the added generation capacity and ancillary services needed to firm and shape intermittent (variable) renewable resources;
- The integration adder should be applied to intermittent renewables only since baseload and load-following renewables do not require firming and shaping;
- The integration adder should focus on generation, not transmission and distribution;
- If the Commission decides to adopt, or considers adopting, an integration adder for baseload renewables and fossil fuel generation, it should do so in a subsequent phase of this proceeding and only after the full implementation of SB 1122;
- If the Commission considers adopting an integration adder for baseload renewables, then it should include the added values that bioenergy can provide, including flexibility, grid stability and voltage support (biomass and biogas); ramping and storage (biogas).

B. RESPONSES TO PARTIES' COMMENTS AND COMMISSION STAFF'S FOLLOW-UP QUESTIONS RELATED TO THE INTEGRATION ADDER.

BAC's responses to the Energy Division's follow-up questions and to parties' replies to the March 26 ACR are below.

² "An Assessment of Biomass Resources in California, 2007, 2010 and 2020," prepared for the California Energy Commission by the University of California Davis, December 2008. CEC-500-2013-052.

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?

BAC agrees with most parties that an integration adder should include the costs "associated with integrating variable energy resources such as costs associated with regulation, ramping, and cycling."³ (emphasis added) In particular, the integration adder should focus on the generation costs needed to firm and shape variable (intermittent) resources. Variable generation resources include wind power, photovoltaics and concentrating solar.⁴

BAC agrees with the Opening Comments of PG&E and Calpine that the integration adder should focus on the added costs necessary to integrate intermittent renewables, meaning the firming, shaping and other ancillary services required for intermittent renewables.⁵ As PG&E notes in its Opening Comments, increases in "intermittent renewable generation require the system to be more operationally flexible to ensure adequate system reliability. Making the system more operationally flexible creates additional renewable integration costs."⁶ Recent studies underscore the significant costs associated with intermittent renewables and the importance of diversifying California's renewable electricity sources as the state moves beyond 33 percent renewables.⁷

³ Email from Jason Simon, CPUC Energy Division, follow-up question #1 from July 21, 2014 email.

⁴ Andrew Mills and Ryan Wiser, *Strategies for Mitigating the Reduction in Economic Value of Variable Generation with Increasing Penetration Levels*. LBNL. (March 2014) Available at <http://emp.lbl.gov/sites/all/files/lbnl-6590e.pdf>.

⁵ PG&E's (U 239 E) Opening Comments on RPS Plans and Proposals, filed July 2, 2014, at page 2 and pages 4-9.

⁶ PG&E's Opening Comments, above, at page 3.

⁷ *Investigating a Higher Renewables Portfolio Standard in California*, Energy and Environmental Economics, Inc. (January 2014), available at:

http://www.ethree.com/public_projects/renewables_portfolio_standard.php; Andrew Mills and Ryan Wiser,

BAC agrees with Calpine that the integration adder should focus on the tangible procurement costs of additional capacity and other ancillary services needed to integrate intermittent renewables.⁸ As Calpine notes, those costs include regulation, ramping and Resource Adequacy costs that are currently excluded from the Least Cost, Best Fit (LCBF) analysis.⁹

BAC opposes the recommendations of the Large-scale Solar Association, CEERT and other parties that the integration adder should be applied to all generation resources.¹⁰ Other generation resources do not require the firming and shaping needed to integrate intermittent renewables. In fact, other renewables that are baseload or load-following can provide the firming and shaping needed to integrate intermittent renewables. Other costs and benefits associated with different resources are beyond the scope of an integration adder and should be addressed elsewhere.

- 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?**

BAC does not have a position on this issue at this time.

- 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**

Changes in the Economic Value of Variable Generation at High Penetration Levels: Pilot Case Study of California, LBNL (June 2012). Available at: <http://eetd.lbl.gov/EA/EMP>.

⁸ Comments of Calpine in Response to ACR Questions, filed July 2, 2014, at page 5.

⁹ Id. At pages 6-8.

¹⁰ Large-scale Solar Association's Opening Comments at pages 10-11; CEERT's Comments on the IOU's 2014 Procurement Plans, filed July 2, 2014, at page 24, BrightSource Opening Comments at page 8.

more than one approach please be specific regarding the procedural steps and timeline that the CPUC should follow in developing integration adders.

BAC agrees generally with CalWEA and PG&E that the Commission should adopt an integration adder for 2014 procurement based on currently available information. As CalWEA stated, “The Commission should . . . proceed in 2014 with values that can readily be calculated using the data at hand.”¹¹ As PG&E notes, “While various ongoing flexibility studies (such as the Commission’s Long-Term Procurement Planning (“LTPP”) proceeding) may be the appropriate public venue to develop a California-specific RICA, such effort will likely take at least a year to complete.”¹² BAC agrees with PG&E that it would be much better to adopt an interim integration adder, based on publicly available information, in time for the 2014 RPS procurement process.¹³ In the longer run, the Commission can consider data from all three sources: 1) publicly available data, 2) CAISO’s market-based data, and 3) operational flexibility studies in the LTPP proceeding. The latter two categories may be the most accurate in the long run as they will capture the costs associated with real-time operations, but both will take more time to develop an integration adder.¹⁴

- 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?**

BAC recommends that a) the Commission adopt the definition and methodology for the integration adder, and b) the utilities calculate the specific values to be used in LCBF. In this way, the methodology will be consistent across utilities, but the specific calculation will better represent the utility that is procuring the resource and will be less prone to delays than if the Commission has to calculate the specific values for LCBF.

¹¹ CalWEA Comments at page 28-29.

¹² PG&E’s Opening Comments at page 6.

¹³ PG&E’s Opening Comments at page 9.

¹⁴ BrightSource’s Opening Comments at page 10; CalWEA’s Comments at page 30.

- 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?**

BAC agrees with PG&E, Calpine and other parties that it is important to adopt at least an interim integration adder in time for the 2014 RPS solicitation and that it will affect procurement decisions.¹⁵ It is important to do sooner for several reasons. First, not having an adder distorts prices significantly since the integration costs for intermittent renewables are not included in contract prices or the comparison of bids. As PG&E stated, “Failing to recognize this cost distorts the selection of renewable resources, and results in higher costs to customers.”¹⁶ Calpine also notes that, “a short-sighted approach that continues to focus on the resources with the lowest contract prices is unlikely to lead to procurement that is truly least cost in the long-run.”¹⁷

Second, several large biomass facilities have Power Purchase Agreements that expire soon and the adoption of an integration adder would make it much more likely that their PPAs will be competitive with intermittent renewables and therefore renewed, increasing the likelihood that California will maintain these important baseload renewable resources.

Third, as California begins to consider increasing renewables beyond 33 percent, it will be important to more accurately understand and quantify the relative costs of different renewables and renewable portfolios. Adopting an interim integration adder will begin to reduce the current market distortion and better enable California to plan for greater renewable energy penetration.

¹⁵ PG&E Comments at page 6; Calpine Comments at pages 6-7.

¹⁶ PG&E Comments at page 6.

¹⁷ Calpine Comments at page 7.

- 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.**

BAC generally supports the framework proposed by PG&E, specifically that the RICA includes costs incurred to address renewable forecast uncertainty: the hour-to-hour, multi-hour, and intra-hour variability.¹⁸ BAC believes that production cost modeling should be utilized as a component of the process to determine the costs associated with integrating renewables, but as with any modeling technique, the outcome is highly dependent on the input assumptions.

BAC notes that identifying the “incremental renewable resources”¹⁹ suggests that this methodology may be applied to each individual bid creating a potentially burdensome and timely process to evaluation renewable bids: “For example, one can calculate and compare RICA values under different assumptions (i.e., the number of hours within a year that a renewable resource can have its output curtailed)”²⁰. While BAC generally supports the framework of the modeling, BAC believes this type of modeling exercise and framework should only be applied to develop an understanding of the impacts of different resources and not specific projects. BAC believes that the PG&E framework is consistent with CalWEA’s medium-term²¹ and long-term component²².

- 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?**

¹⁸ PG&E Comments at page 3

¹⁹ PG&E Comments at page 4, Step 2.a)

²⁰ PG&E Comments at page 6, Step 5.a)

²¹ CalWEA’s comments at page 22

²² CalWEA’s comments at page 24

Saturation levels should be linked to the RPS and other procurement policies, as well as other statewide policies such as AB 32 and Executive Order S-3-05 (80 percent reduction in greenhouse gases by 2050).

- 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?**

BAC generally supports CalWEA's framework of addressing separately short-term, medium-term, and long-term integration cost components;²³ however, prefers PG&E's framework to account for medium-term and long-term integration costs.

BAC supports using CAISO data to identify short-term integration costs because existing costs should represent most accurately the state of the grid today. Without detailed explanation of how "CalWEA has extended the CAISO's allocation method to assign supply-related FRC costs to specific supply sources..."²⁴, BAC cannot comment on the accuracy of the example calculations,²⁵ only that BAC supports the overarching framework of using existing CAISO data.

BAC believes that the framework outlined by CalWEA to calculate medium-term and long-term integration costs are not specific enough to fully understand how these costs would be calculated and assigned. Without these specifics, BAC does not believe that this portion of the CalWEA framework would produce reasonable or defensible numbers.

BAC recommends that the Commission consider the PG&E framework to develop the medium-term and long-term integration costs (in conjunction with the LTPP findings). This approach would utilize the detailed and thorough framework identified in PG&E's proposal while avoiding

²³ CalWEA's comments at page 19

²⁴ CalWEA's comments at page 21

²⁵ CalWEA's comments at page 22, Table 2.

project specific modeling by focusing on aggregate “incremental renewable resources” across each utility’s grid.

C. CONCLUSION

BAC urges the Commission to adopt an integration adder for intermittent renewables to ensure that the relative costs of various renewable energy sources are accurately reflected and California’s portfolio is optimized to be truly Least Cost, Best Fit. BAC also urges the Commission to adopt at least an interim adder in time for 2014 RPS procurement.

DATED: July 30, 2014

Respectfully submitted,

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VERIFICATION

I am a representative of the non-profit organization herein, and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information or belief, and, as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 30th day of July, 2014, at Kensington, California.

/s/ Julia A. Levin

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