

**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.

Rulemaking 11-05-005
Filed May 5, 2011

**COMMENTS IN RESPONSE TO THE SECOND ASSIGNED COMMISSIONER'S
RULING ISSUING PROCUREMENT REFORM PROPOSALS**

Paul Thomsen
Ormat Technologies
6225 Neil Road
Reno, NV 89511
Phone: 775-313-6569
Fax: 775-823-5401
pthomsen@ormat.com

November 15, 2012

**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.

Rulemaking 11-05-005
Filed May 5, 2011

**COMMENTS IN RESPONSE TO THE SECOND ASSIGNED COMMISSIONER'S
RULING ISSUING PROCUREMENT REFORM PROPOSALS**

Ormat Technologies (Ormat) thanks the Commission for the opportunity to respond to proposals posed by the Assigned Commissioner on the RPS procurement process. The proposals cover nine substantive areas ranging from proposals to provide for expedited review of short and long term Renewable Portfolio Standard (RPS) procurement processes to changes in the role of the Independent Evaluator (IE) and changes in the application of the Least Cost Best Fit (LCBF) Market Valuation criteria in light of the new requirements included in SB 2 (IX). The Assigned Commissioner poses 31 questions spanning the 9 substantive areas. Ormat comments will focus on questions posed associated with the role of the Independent Evaluator and changes in the LCBF criteria.

1. COMMENTS ON THE INDEPENDENT EVALUATOR PROPOSAL

Question 23 asks if the Commission should adopt any additional evaluation criteria or requirements for IEs assigned to RPS solicitations. One specific weakness in the current

utility solicitations is that the utility does not indicate in its solicitation any specific energy and system requirements that may affect the value of a resource to the utility. For example, if a utility has system requirements in a particular location on their system that would benefit from a flexible renewable energy source being sited proximate to that location then the extra value of the flexibility attribute at that location is not typically communicated in the solicitation. As a result, RFP bids cannot be tailored to specifically meet the utility's energy, capacity and ancillary service needs and any bids that end up meeting those needs would only be submitted by chance.

In contrast, when a utility clearly communicates its needs in its solicitation, bids will be more responsive and the bidding process will result in a selected portfolio with lower system and integration costs. Failure to communicate utility needs will lead to systematic undervaluation of resources with system value and will lead to the selection of a portfolio with higher system integration costs than is necessary. Therefore, Ormat recommends that someone, either the IE or the Commission, review the utility's detailed statement of needs and ensure that those needs are specified in enough detail and communicated clearly enough in the solicitation document to allow RFP bidders to tailor their bids to achieve best fit at lowest cost. A further benefit of specifying the needs more clearly is that the IE will then in a position to better evaluate whether the selected bids meet the identified needs. The IE should indicate in its evaluation of the selected bids which identified needs remain unmet and indicate if bids that qualitatively meet identified needs are not being selected by the utility in favor of bids that are lower cost.

In addition, Table 7 specifies that the IE should include in its report "supplemental calculations" of the capacity value and ancillary services value. Ormat concurs that these

are important components of the IE report. We recommend, however, that the Commission specify how those supplemental calculations should be performed rather than leaving it to the IE to determine. Ormat addresses how those should be included in our response to Question 24, below.

1. RESPONSE TO QUESTION 24

Question 24 states: “Please describe how the Commission should implement each of the four specific topics listed in Section 399.13(a)(4)(A). Please include quantitative examples where relevant.”

Topic (i): Indirect costs associated with needed transmission investments and ongoing electrical corporation expenses.

The Commission should implement 399.13(a)(4)(A)(i) by requiring that a broader level of indirect costs associated with transmission investments and integration costs be included and valued in the LCBF process or in the qualitative/quantitative criteria that the utilities use to differentiate bids. Ormat recognizes that D. 12-11-016 declines to adopt a value for integration costs at this time in order to develop such costs in a public forum to occur later in this proceeding.¹ Such an approach is in fact consistent with SB 2 (1X). Nonetheless, Ormat wishes to emphasize in responding to Commissioner Ferron’s October 5 questions our view that all resources require some level of integration cost, the predominant integration costs that are relevant with respect to renewable energy resources are directly associated the integration of variable energy resources. Indirect costs include the costs associated with electric system operations changes, the opportunity cost of underutilized transmission, gas system costs and

¹ . D. 12-11-016, p, 28 and Conclusion of Law No. 9.

variable energy resource curtailment cost.

- Costs associated with operational process changes to accommodate variable renewable energy resources include:
 - balancing area cooperation or consolidation, real or virtual;
 - Switching to the use of sub-hourly scheduling for generation and interchanges;
 - Enabling coordinated commitment and economic dispatch of generation over wider regions;
 - Incorporating state-of-the-art wind and solar forecasts in unit commitment and grid operations;
 - Increasing the flexibility of dispatchable generation where appropriate (e.g., reduce minimum generation levels, increase ramp rates, reduce start/stop costs or minimum down time);
 - Committing additional operating reserves as appropriate;
 - Building transmission as appropriate to accommodate renewable energy expansion;
 - Targeting new or existing demand response programs (load participation) to accommodate increased variability and uncertainty;
 - Eventually requiring wind plants to provide ramp - down reserves;
 - Eventually requiring solar plants to limit ramp-up burden ;
 - Wear and tear associated with using conventional resources for cycling;
 - The opportunity cost of transmission (explained below); and,
 - Investments in gas system infrastructure to support using conventional gas-

fired resources to provide ancillary services for intermittent resources.

- Opportunity costs of under-utilized transmission include:
 - Capacity factor: maximizing the capacity factor of renewable resources delivered over the transmission system should be maximized so as to limit the amount of new transmission that is required and maintain as much flexibility in the transmission system as possible.
 - Transmission corridors and transmission capacity are scarce and new transmission capacity is expensive to construct. The cost of the next major transmission project will be more expensive to construct and more difficult to permit.
 - Transmission provides flexibility is Dispatch Optionality, Load Diversity, Limits LCR, Reduction in Planning Reserve Margin Requirements, facilitates balancing area cooperation, reduction in contingency reserve obligation, can allow optimization of gas transportation assets; optimization of regional market purchases, system reliability benefits, protection against conventional fuel source uncertainty, and protection against carbon and greenhouse gas uncertainty
- Gas system costs include:
 - changes to the gas delivery scheduling process and gas transportation & distribution infrastructure to accommodate increasing use gas-fired generation needed to back-up intermittent renewable generation.
- Variable energy resource curtailment costs include:
 - Must run or first in the dispatch order implies increases electric system operating costs so variable energy resources should be curtailable to prevent

over-investment in rarely dispatched fossil resource additions to support ramp up and ramp down situations.

Implementation: CPUC should require the IOUs to include in their RPS procurement process an estimate of these other indirect costs of integrating RE resources into their respective electric systems.

Topic ii: The cost impact of procuring the eligible renewable energy resources on the electrical corporation's electricity portfolio

The RPS Quarterly and Annual reports reflect the delivered cost of renewable energy to the utility but do not include transmission cost and they do not include any of the indirect costs identified above. As a result the costs are misleading and do not reflect the full ratepayer impact of the procured resources. All costs including indirect costs must be disclosed so that one can compare the total cost of adding one renewable energy project versus another.

Topic iii: The viability of the project to construct and reliably operate the eligible renewable energy resource, including the developer's experience, the feasibility of the technology used to generate electricity, and the risk that the facility will not be built, or that construction will be delayed, with the result that electricity will not be supplied as required by the contract.

The viability score should be given greater weight in the composite project score.

Topic iv: Workforce recruitment, training, and retention efforts, including the employment growth associated with the construction and operation of eligible renewable energy resources and goals for recruitment and training of women, minorities, and disabled veterans.

The proposal will result in a more economically efficient renewable energy portfolio which will have beneficial economic effects. The proposal does not disadvantage recruitment, training and retention efforts relative to the *status quo* proposal.

2. RESPONSE TO QUESTION 25

Question 25 asks for a comparison of the implementation proposal with the existing LCBF methodology as set out in D.04-07-029 and applied in the 2011 RPS Procurement Plans approved in D.11-04-030 for each of the four topics.

Implementation of LCBF formula with additional consideration of indirect costs of integrating intermittent resources increases the complexity of the RPS procurement process but produces substantial cost saving benefits by guiding the selection of a balanced Renewable Energy selection process. Ormat's proposal is consistent with the goal of pursuing a process that accurately values renewable resource alternatives and results in the selection of least cost best fit resources in an RFP process. It is also consistent with an approach that allows IOUs flexibility to use qualitative and quantitative factors to differentiate between renewable energy bids.

4. RESPONSE TO QUESTION 26

Question 26 asks for an evaluation of the LCBF proposal as a whole and for an explanation of how the proposal would affect costs ultimately paid by ratepayers for RPS-eligible energy, using quantitative examples where relevant, for each of the four topics.

With respect to Topic i, considering and including indirect costs in the LCBF analysis will cause the cost of integrating intermittent renewable energy resources to decrease. The current resource selection process is based upon a limited number of cost and

value variables. The actual cost including indirect costs of adding a renewable energy resource is not known or ever calculated.

- The cost for developing transmission to access renewables will decrease because transmission assets will be better utilized.
- The overall cost for adding renewable resources will decrease because the process used to select renewable resources will more accurately reflect the total cost of adding each resource.
- Quantitative examples of integration cost are available but indirect cost will vary based upon the resources selected and operating practices utilized.

5. RESPONSE TO QUESTION 27

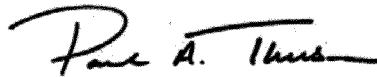
Question 27 states: “For each of the four topics, and for your LCBF proposal as a whole, please explain how your proposed criteria would contribute to the efficiency of the RPS procurement process.”

The proposals Ormat is making are not focused on process efficiency as much as on assuring that we select generation resources by satisfying the LCBF criterion in a way that fits well-defined and articulated system needs while reducing cost.

6. SUMMARY OF COMMENTS

Commissioner Ferron’s October 5 ruling asked a number of questions that go to details of the LCBF methodology. Key among Ormat’s concerns is to support changes to the Independent Evaluator process by cueing the IE to comment on how the bids fit the utilities’ specific needs, adding more detail to the capacity value and ancillary services value supplemental calculations, and proceeding as quickly as possible to the phase of this proceeding that will set a value by which the utilities can include integration costs and other indirect costs into the LCBF calculation. By adopting the measures described herein the Commission will ensure that California achieves a LCBF renewable resource portfolio.

Respectfully submitted,



Paul Thomsen
Director of Policy and Business Development
Ormat Technologies
6225 Neil Road
Reno, NV 89511
Phone: 775-313-6569
Fax: 775-823-5401
pthomsen@ormat.com

November 15, 2012

VERIFICATION

I, Paul Thomsen, am the Director, Policy & Business Development of Ormat Technologies, Inc. I am authorized to make this Verification on its behalf. I declare under penalty of perjury that the statements in the foregoing copy of **COMMENTS ON RPS PLANS AND NEW PROPOSALS** dated November 15, 2012 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 November 15, 2012 at Reno, Nevada.

A handwritten signature in black ink that reads "Paul A. Thomsen". The signature is written in a cursive style with a large initial "P" and a long horizontal stroke extending to the right.

Paul Thomsen

Director, Policy & Business Development, Ormat Technologies Inc.