

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Integrate and  
Refine Procurement Policies and Consider  
Long-Term Procurement Plans

R. 10-05-006

**Comments of  
the California Wind Energy Association  
on the CPUC Staff's Draft Modeling of  
a 33% Renewable Portfolio Standard**

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On behalf of  
**CALIFORNIA WIND ENERGY ASSOCIATION**

July 9, 2010

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PUBLIC UTILITIES COMMISSION  
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Rulemaking 10-05-006

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The California Wind Energy Association (CalWEA) appreciates the opportunity to provide input on the proposal of Commission staff for a set of inputs, assumptions, and resulting scenarios that will guide long-term planning for renewable generation under a 33% Renewable Portfolio Standard (RPS) within Track I of the 2010 Long-Term Procurement Planning proceeding. The Commission staff and its consultants presented this material at a June 18, 2010 workshop. The presiding administrative law judge requested these comments in her rulings of May 28 and June 22, 2010. In particular, CalWEA addresses several of the staff's questions included in the June 22 ruling.

**1. Inputs and assumptions**

*Staff Question No. 1: Do the proposed inputs and assumptions regarding the cost, value, and estimated Megawatt (MW) availability of renewable resources in California and throughout the West accurately reflect the best-available industry knowledge?*

In August 2009, CalWEA joined with a number of solar parties to present comments on the Commission staff's initial modeling of a 33% RPS, as presented in the report *33% Renewables Portfolio Standard: Implementation Analysis Preliminary Report* (Report), issued in June 2009.<sup>1</sup> These comments focused largely on the inputs and assumptions used in this modeling. CalWEA is pleased that the Commission staff has included many of these comments in its updated work. The staff summarized many

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<sup>1</sup> "Comments of the Solar Alliance, the California Wind Energy Association, the Large-Scale Solar Association, and the Vote Solar Initiative on the CPUC Energy Division's 33% RPS Report and Model," dated August 28, 2009.

of these changes at the December 2009 and June 18 workshops. In particular, CalWEA is pleased that the staff's new 33% RPS modeling includes:

- Explicit modeling of the use of tradable Renewable Energy Credits.
- Lower wind and solar PV capital and O&M costs, and higher wind capacity factors.
- A more realistic depiction of the use of excess or upgraded capacity on existing transmission lines.

**2. Use a “least regrets” method of evaluation and selection.**

***Staff Question No. 6:** The June 2009 33% RPS Implementation Analysis Preliminary Results report found that different 33% RPS scenarios help to achieve different policy goals, with no one scenario performing well across all policy metrics. Therefore, does the proposed set of scenarios strike an appropriate balance, presenting “reasonably feasible” and “plausible” 33% generation futures that still represent “substantially unique procurement strategies resulting in material changes to corresponding (fossil) procurement needs and/or required (conceptual) transmission”, as envisioned in the guiding principles above?*

The Commission undoubtedly is aware that on June 4, 2010, the California Independent System Operator (CAISO) filed with the Federal Energy Regulatory Commission (FERC) for approval of a Revised Transmission Planning Process (RTPP). Among other goals, a central aim of the RTPP is to apply a “least-regrets” planning approach to identify and develop a new category of “policy-driven” upgrades to the transmission grid expected to be necessary to meet California’s 33% RPS goal. The May 2010 Memorandum of Understanding between the Commission and the CAISO indicates that the Commission supports this approach to transmission planning.

In a nutshell, the “least regrets” approach uses a series of engineering sensitivity analyses to identify which common set of resources are needed in most, if not all, such sensitivity cases. In the transmission context, the least-regrets approach recognizes that the pattern of renewable resource development is uncertain, and as a result evaluates multiple possible development scenarios to identify a set of transmission upgrades that will facilitate California’s renewable energy goals, regardless of the actual development pattern that emerges. The analysis attempts to identify the transmission elements that are common to most, if not all, development scenarios, in order to reduce the risk of over-

building transmission and to ensure that ratepayers are not saddled with excessive transmission costs. Regulators will have greater confidence that these major transmission elements clearly are needed to further the state’s renewable energy policy goals, and the utilities will have greater confidence that they can recover the construction costs of these needed infrastructure additions through their rate bases. If this multi-scenario planning analysis is successful, the policy-driven transmission upgrades identified as core transmission elements should serve multiple transmission system needs and, therefore, are highly likely to be “used and useful” for utility service.

CalWEA submits that the Commission should undertake a similar “least regrets” analysis in evaluating the likely mix of renewable generation resources to meet a 33% RPS goal. It is particularly important to use this approach if the selected mix of competitive renewable energy zones (CREZs) is to be used to develop conceptual transmission plans. The CPUC staff may be attempting to do so in its selection of scenarios and by constructing a “balanced” scenario. However, as discussed further below, CalWEA is concerned that the staff’s use of a “commercial core” of RPS projects is not consistent with a “least regrets” approach. Further, it was unclear from the workshop presentation whether the scope of the CPUC staff’s planned sensitivity analyses is broad and comprehensive enough such that the “balanced” scenario really constitutes a “least regrets” approach. CalWEA discusses below the range of sensitivity analyses that should be considered in constructing a “least regrets” evaluation of the future portfolio of renewable generation resources.

### **3. Recognize that there is uncertainty even in the “commercial core.”**

***Staff Question No. 5:** Do you agree with the concept of holding constant through all scenarios a “discounted core” of the generation resources that appear most likely to develop by 2020? Do the proposed criteria and resulting projects comprising the “discounted core” represent a reasonable forecast of viable RPS generation in 2020, not necessarily by specific project, but by technology and location? If not, what other objective, publicly-available criteria might be more appropriate for building a “discounted core”?*

All of the Commission staff’s scenarios include the same “commercial core” of renewable projects. These projects are ones with a Commission-approved power

purchase contract and where the developer has filed a completed application for its major land-use permit. The CPUC staff has granted these projects first priority in the resource selection process in all of its scenarios.

CalWEA believes strongly that, while demonstrating progress toward project development, a PPA and a completed land-use permit application do not guarantee that development will occur, as inclusion in the discounted core implies. The June 18 presentation states that “Discounted Core projects are given first priority in the resource selection sorts, reflecting their high probability of development” and that “Non-Discounted Core projects are given priority over generic resources but are not guaranteed development.” Taking these statements together, the staff appears to treat Discounted Core projects as guaranteed to be developed. Labeling all of these projects as “high probability” and effectively guaranteeing them transmission will prejudice and skew the market.

CalWEA does not disagree that projects with a PPA and a completed land-use permit application should be scored higher than other projects in terms of their potential to be developed successfully. However, to include this “commercial core” in all scenarios is not consistent with a “least regrets” approach, because there is no examination of whether there might be conditions under which not all of the “commercial core” will materialize. CalWEA recommends that the Commission staff include at least two scenarios that do not assume a “commercial core” of projects, in order to test the robustness of the assumption of a “commercial core.” One of these might be the “environmentally constrained” scenario in which there are environmental constraints on the development of large-scale RPS resources. This is a scenario in which a signed PPA and a filed land-use permit for a large-scale RPS project may not be a strong indicator of project success. The other logical scenario in which to exclude a “commercial core” is the cost-constrained scenario, in which least cost is the major concern. These scenarios can be used to test whether the same mix of generation resources and backbone transmission upgrades result if the “commercial core” does not materialize as expected.

In the alternative, if the Commission decides to use a “commercial core,” it should use a smaller set of core projects, such as Set #3 in the staff’s Slide #59 of the Part 1 presentation. This set of core projects includes only those that have both an approved PPA and approval for their key land use permit. CalWEA would agree that approval of both the PPA and the land use permit portend a significantly higher probability of development.

#### **4. Intelligent use of sensitivity analyses**

The CPUC staff’s workshop presentation does not include a significant discussion of the sensitivity of the results to changes in key inputs and assumptions. As discussed above, the intelligent use of sensitivity analyses is the key to the successful application of a “least regrets” approach.

**Sensitivity to higher and lower resource costs.** CalWEA recommends that the staff should include sensitivity analyses with both higher and lower costs for the various renewable technologies. This is particularly important for technologies (such as large-scale solar) that are expected to contribute significantly to the 33% RPS, but for which there is little experience with actual project costs. The RETI analysis includes wide uncertainty bands around each estimated CREZ cost to take into account numerous uncertainties associated with the analysis. The same should be done in this analysis so as to avoid portraying a false sense of certainty.

**Sensitivity to the counting rule for RA.** The staff also should include a sensitivity that uses the Commission’s former method for calculating the resource adequacy (RA) value of intermittent renewables: that method sets the RA value of these resources using their capacity factor in the noon-to-6 p.m. on-peak hours. This sensitivity would be in addition to a case using the current “70% exceedance” method for counting the RA value of intermittent renewables. The 70% exceedance method was proposed by the IOUs and the CAISO and adopted by the Commission in D. 09-06-028 with some

modifications. The adopted “70% exceedance” method is controversial,<sup>2</sup> departs from best practices in the rest of the U.S.,<sup>3</sup> and may de-rate intermittent resources too severely, thus over-estimating the amount of additional system resources required to meet RA goals. As CalWEA discussed at the December 2009 workshop, it would be a simple matter to include this sensitivity in the 33% RPS model.<sup>4</sup>

**Sensitivity to the increased RA value of geographically and technologically diverse renewable resources.** In adopting the “70% exceedance” method in D. 09-06-028, the Commission correctly recognized that the approach failed to consider the fact that, due to the seasonal, temporal, and geographic diversity of wind and solar generation, the aggregate RA value of all intermittent renewable generation is greater than the sum of the individual RA values of specific projects. As a result, the adopted RA counting rule includes an adder to the RA value of each wind and solar project based on its contribution to the aggregate capacity value of all intermittent renewables, both wind and solar. The 2010 RA results for wind resources in California demonstrate the importance of this adjustment to recognize the aggregate value of geographically-dispersed wind resources, even just within California. This adjustment alone constitutes about 40% of the total 2010 RA qualifying capacity for wind resources in California.<sup>5</sup> This diversity adjustment will be particularly important in scenarios with large amounts of both wind and solar, and with a variety of wind resources in areas with substantially different wind regimes (for

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<sup>2</sup> For example, CalWEA and other parties have outstanding applications for rehearing of D. 09-06-028 which assert that the 70% exceedance method adopted in D. 09-12-028 discriminates against intermittent renewable technologies and was not the product of reasoned decisionmaking.

<sup>3</sup> The North American Reliability Council (NERC) has recommended that grid operators should move to the use of the Effective Load Carrying Capacity (ELCC) approach for determining the capacity value of intermittent renewables. See “Accommodating High Levels of Variable Generation,” (April 2009, NERC Special Report), at 36-41. This report is available on the NERC website at [http://www.nerc.com/files/IVGTF\\_Report\\_041609.pdf](http://www.nerc.com/files/IVGTF_Report_041609.pdf). The old method of setting the RA value for wind and solar resources using their on-peak capacity factor has been validated by ELCC studies, while the new “70% exceedance” method has not. See April 2009 NERC Special Report, at 39.

<sup>4</sup> The RA value of renewable resources, as a percent of nameplate, is an input assumption listed in the “Resource Characterizations” tabs of both the 2009 E3 33% RPS Calculator and the 2010 E3 33% RES model, for example.

<sup>5</sup> See the table on page 3 of the CPUC Energy Division’s “Wind and Solar Qualifying Capacity Fact Sheet,” available at [http://www.cpuc.ca.gov/NR/rdonlyres/B0AC73A8-737D-46CF-B021-BD28CB351FC1/0/WindandSolarQualifyingCapacity\\_FactSheet.doc](http://www.cpuc.ca.gov/NR/rdonlyres/B0AC73A8-737D-46CF-B021-BD28CB351FC1/0/WindandSolarQualifyingCapacity_FactSheet.doc).

example, California and Wyoming).<sup>6</sup> As shown in the E3 presentation at the workshop on the capacity credit from wind, solar thermal, and solar PV resources, the capacity credit from these resources is maximized in a portfolio that includes a balanced and geographically diverse mix of all three types of resources.<sup>7</sup> The staff's modeling does not incorporate the full RA diversity value of the assumed mixes of renewable generation. The RA value for such diverse mixes of wind and solar generation will be much higher than those calculated using the current RA values calculated just for today's limited amounts of California wind and solar resources. For this reason, the staff's current RPS model understates the capacity value of the diverse portfolios of renewable resources that are included in the model. A sensitivity analysis using the old RA counting rule for intermittent generation, which produces higher RA values, is a reasonable means to address this problem until more sophisticated analyses are available.

## **5. Incorporating the results of the CAISO IRRP Integration Study**

The results of the CAISO's ongoing Integration of Renewable Resources Program (IRRP) will be particularly important to determine if the system needs additional resources for integration (such as fossil generation, demand-side response, or storage resources), beyond those that may be needed for system capacity or energy requirements. In addition, the results may have a significant impact on the type of needed fossil resources, as well as on the degree of flexibility required in California's fossil fleet, in order to integrate 33% renewables. The amount and type of system resources needed for integration (which ideally would be determined in the market in response to the appropriate price signals) will be the key driver of integration costs. The staff presentation is unclear on how the CAISO IRRP results will be incorporated into the 33% RPS modeling. We understand that the CAISO IRRP process is not moving quickly enough, but the LTPP process should benefit from its completion, including a full opportunity for stakeholder comment which has not yet occurred at the CAISO.

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<sup>6</sup> Zephyr Power Transmission, LLC is filing comments today that includes an analysis showing that the combination of (1) California wind and (2) Wyoming wind delivered to California has a capacity value that is 39% higher than the capacity value of the two wind resources separately (i.e. without delivering the Wyoming wind to California) and more than 100% greater than if all the wind energy is obtained from California alone..

<sup>7</sup> See Slides 37-42 from the Part 2 of the presentation at the June 18 Workshop.

All of the 33% RPS scenarios in the staff's latest modeling include significant amounts of both wind and solar generation. Past work on renewables integration, in particular the CEC's Intermittency Analysis Project and NERC's April 2009 Special Report on renewables integration, have emphasized the complementary nature of wind and solar generation and the fact that the presence of both resources may reduce integration costs, particularly when these resources are widely dispersed geographically.<sup>8</sup> In contrast, the CAISO's past RPS integration studies have examined high levels of new wind generation only, with most of the new generation added only in the Tehachapi wind resource area, without significant solar capacity.<sup>9</sup> In evaluating the CAISO's forthcoming IRRP work on integration, the Commission and the Energy Division should ensure that it includes realistic scenarios for the future geographic and technological diversity of the state's renewable resources.

## **6. Careful use of environmental assessments.**

***Staff Question No. 2:** Do you agree that concerns about environmental impacts may significantly affect the development of renewable generation between now and 2020, and should thus be considered in long-term planning, to the extent possible? Is the Staff-proposed methodology appropriate for providing a high-level screening of the environmental concerns associated with renewable generation, by type and location?*

Staff appropriately points out that the Desert Renewable Energy Conservation Plan (DRECP) and other efforts are examining in a scientific and rigorous way the potential relative environmental impacts of various renewable energy development areas, and will provide direction to developers in coming months and years.<sup>10</sup> By their nature, less sophisticated attempts at assessing environmental impacts, such as the one made by RETI and Aspen's approach for the LTPP, are going to be very crude assessments of the ability to develop projects, certainly in comparison to the detailed surveys conducted for each individual project. Several steps therefore should be taken to improve accuracy to

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<sup>8</sup> For example, see the April 2009 NERC Special Report, at 24.

<sup>9</sup> "Integration of Renewable Resources" (November 2007, CAISO), at 2-3, 24, and 68, available at <http://www.caiso.com/1ca5/1ca5a7a026270.pdf>.

<sup>10</sup> "Attachment 1: Planning Standards for System Resource Plans – Part II, Long-Term Renewable Resource Planning Standards" (June 22, 2010), p. 23.

the extent possible, to ensure the appropriate use of the document, and to recognize the large inherent uncertainties.

**Ensure accuracy of impact area.** It is unclear whether Aspen used a footprint for wind projects consistent with their actual disturbance area of 2% to 5%.<sup>11</sup> Permitting agencies do not consider the lease area in determining impacts. They look at direct and indirect disturbance on species of concern and their habitat, which is usually related to direct disturbance area. Using the full lease area in any formulas, as RETI erroneously did, would be inconsistent with existing laws governing project siting.

**Disclaimers should be displayed.** It is very important that the Commission clearly and prominently state the limited purpose for which the results of this modeling should be used. We appreciate, therefore, staff's statement in Attachment 1 to the June 22 Ruling that this assessment is "not in any way intended or adequate to reflect project-specific environmental assessments."<sup>12</sup> It should be made clear, anywhere the environmental scoring is discussed, that it is intended only as an input to the LTPP process as a sensitivity case to assess the need for system resources and to develop conceptual transmission plans.

Certainly in no case should this environmental assessment process extend to project-specific rankings. It is impossible for such a high-level approach to accurately assess project-specific impacts, which can only be determined definitively after costly site-specific surveys and analyses are conducted.

**Uncertainties should be clearly indicated.** As with the economic assessment discussed above, the environmental assessments should be accompanied by ranges reflecting the underlying uncertainties. The "environmental supply curve" figure in Aspen's June 18, 2010, presentation, for example, is relatively flat, showing that the large majority of CREZs fall within two y-axis points. Given the uncertainty inherent in the

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<sup>11</sup> See *20% Wind by 2030; Increasing Wind Energy's Contribution to U.S. Electric Supply*, U.S. DOE (May 2008) at p. 110 (available at [www.20percentwind.org/20percent\\_wind\\_energy\\_report\\_05-11-08\\_wk.pdf](http://www.20percentwind.org/20percent_wind_energy_report_05-11-08_wk.pdf)).

<sup>12</sup> See note 10, *infra*.

numbers, the “error band” will likely subsume much of the difference in rankings within these two y-axis points.

Likewise, in Aspen’s wind “bubble chart,” the Solano CREZ scores relatively poorly, yet many wind projects have been successfully permitted there in the past few years. Showing an uncertainty range might reduce the incongruousness of Aspen’s results with actual experience and thus produce a more reasonable basis for an environmental sensitivity case.

## 7. Conclusion

CalWEA appreciates the substantial effort that Commission staff and their consultants have made in preparing and refining the 33% RPS analyses. With the further modifications that CalWEA has recommended above, we believe that these analyses can be a significant resource for the Commission and the parties in shaping the utilities’ upcoming system LTPPs.

CalWEA thanks the Commission for its attention to these comments and looks forward to further active participation in this important case.

Respectfully submitted,

/ s / R. Thomas Beach

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July 9, 2010

## CERTIFICATE OF SERVICE

I hereby certify that I have this day caused to be served a copy of the foregoing document, **Comments of the California Wind Energy Association on the CPUC Staff's Draft Modeling of a 33% Renewable Portfolio Standard**, by Electronic Mail where possible and First-Class Mail where not, on all known parties to R. 10-05-006, named on the service list attached to the original certificate of this document pursuant to the Commission's Rules of Practice and Procedure.

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

Executed at Berkeley, California, Friday, July 9, 2010.

/s/ Christa Goldblatt

Christa Goldblatt



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