

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

Order Instituting Rulemaking to Consider	)	Rulemaking No. 08-01-025
Annual Revisions to Local Procurement	)	(Filed January 21, 2008)
Obligations and Refinements to the Resource	)	
Adequacy Program	)	
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**OPENING COMMENTS OF  
THE CALIFORNIA WIND ENERGY ASSOCIATION,  
THE AMERICAN WIND ENERGY ASSOCIATION,  
THE SOLAR ALLIANCE, AND THE LARGE-SCALE  
SOLAR ASSOCIATION  
ON THE PROPOSED DECISION OF ALJ WETZELL**

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Pursuant to Rule 14.3 of the Commission’s Rules of Practice and Procedure and the schedule established in this proceeding by the Presiding Administrative Law Judge (ALJ), the California Wind Energy Association (CalWEA), American Wind Energy Association (AWEA), the Solar Alliance (SA) and the Large-Scale Solar Association (LSA) – collectively, the Joint Renewables Parties – respectfully submit these opening comments on the Proposed Decision (PD) that ALJ Wetzell circulated to the parties on May 15, 2009. These comments focus principally on the PD’s resolution of the “counting rule” to be used to determine the resource adequacy (RA) value of intermittent renewable resources, including California’s significant wind and solar resources. In accordance with Rule 14.3(c), these comments are limited to the factual, legal and technical errors in the PD.

**I. The Commission Should Decide the Issue of the Counting Rule for Wind and Solar Separately from the Other RA Issues in this Proceeding.**

California has made a major commitment to the development of renewable resources for electric generation, with a Renewable Portfolio Standard (RPS) of 20% by 2010 in place and an

extended RPS of 33% by 2020 now pending before the Legislature. These goals are a major element in the state's AB 32 Scoping Plan to reduce its greenhouse gas emissions to 1990 levels by 2020. This Commission has a central role in ensuring that the RPS goals are met, including oversight of the cost to utility ratepayers of meeting these ambitious targets and recommending that a 33% RPS be included as part of the AB 32 Scoping Plan. This case presents the Commission with a complex policy issue – how should new intermittent renewable resources, primarily wind and solar, be counted for resource adequacy purposes? The answer to this question will have a significant impact on the long-term cost and mix of renewable resources in the state. California is not alone in grappling with this question: other state and federal regulatory authorities also plan to integrate large amounts of new intermittent renewable resources into the electric systems under their jurisdiction, and California should consider how other regulators are tackling this question.

This phase of the proceeding also involves a variety of other RA matters that need to be decided in an accelerated time frame, so that the utilities can proceed to acquire year-ahead RA capacity for the next annual RA cycle. Recognizing these constraints, the ALJ adopted a tight time schedule designed to result in a decision on these other RA issues in a timely manner. As this portion of the proceeding has progressed, it has become clear to the Joint Renewables Parties that the time-constrained nature of this phase is ill-suited to the resolution of a significant long-term policy issue such as the RA counting rule for intermittent renewables.

For example, on May 6, CalWEA filed a motion (CalWEA Motion) to admit into the record an important new report from the North American Electric Reliability Corporation (NERC Special Report) on “Accommodating High Levels of Variable Generation.”<sup>1</sup> The NERC Special Report focuses on the integration of increased amounts of intermittent renewable resources into the electric grid in North America, including a recommendation for the methodology that utilities and control areas in the U.S. and Canada should use to assess the resource adequacy value of intermittent renewables. NERC is the organization responsible for developing and enforcing the grid reliability standards in the U.S. and Canada, and is subject to the oversight of federal

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<sup>1</sup> 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).

regulatory agencies in the both countries. No party opposed the CalWEA motion, and the Division of Ratepayer Advocates (DRA) strongly supported it. However, on May 27, the presiding ALJ denied the CalWEA motion, on the grounds that the time constraints of the adopted schedule did not allow the NERC Special Report to be considered. At the same time, the ALJ admitted that the NERC Special Report “appears to be relevant to the issues that were considered in Phase II of this proceeding.”<sup>2</sup> On June 2, 2009, the Joint Renewables Parties joined DRA and the Center for Energy Efficiency and Renewable Technologies (CEERT) in moving for reconsideration of the ALJ’s denial of the CalWEA Motion (Motion for Reconsideration).<sup>3</sup>

We will not repeat here the arguments in the Motion for Reconsideration, but simply observe that the issue of the NERC Special Report illustrates how the tight time frame for this case has hindered the Commission’s consideration of the important long-term issue of the RA value of intermittent renewables. The NERC Special Report is directly relevant to this issue, because it indicates clearly the direction of NERC and the electric industry on the industry-standard method to assess the RA value of intermittent renewables. Ultimately, the methods recommended in the NERC Report may become standards that the California Independent System Operator (CAISO) and California utilities are required to follow. The Joint Renewables Parties cannot imagine that the Commission would want to proceed with deciding this issue without the benefit of the new NERC report. This report exemplifies the new analyses concerning the increasing penetration of renewables that several parties have highlighted are underway.<sup>4</sup>

Given the state’s significant, long-term commitment to renewable resources, California needs to get this decision right, and should consider all relevant and available information – in particular, a major report from the agency responsible for setting the standards and “best

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<sup>2</sup> ALJ’s Ruling on Motion to Reopen Record to Accept Report (May 27, 2009), p. 1.

<sup>3</sup> On June 2, 2009, a Ruling was released expediting the due date for responses to the Motion for Reconsideration. See, <http://docs.cpuc.ca.gov/efile/RULINGS/101594.pdf>.

<sup>4</sup> See LSA’s February 17 Opening Comments, pages 1-2; CalWEA/AWEA/SA’s February 17 Opening Comments, at 7-8; and TURN’s February 17 Opening Comments, at 12-13.

practices” on this issue for the electric industry at large. As set forth in the Motion for Reconsideration, the Commission has several ways in which it can proceed to sever the issue of the RA counting rule for wind and solar from the other, more time-constrained RA issues in Phase II, so that the Commission can consider this long-term issue on the basis of the best and most complete record. The Joint Renewables Parties urge the Commission to give careful consideration to the procedural options discussed in the Motion for Reconsideration.

## **II. Technical, Legal, and Factual Errors in the PD**

### **A. The PD Misstates and Distorts the Position of the Supporters of the Current RA Counting Rule for Wind and Solar.**

The Joint Renewables Parties support the continuation of the current RA counting rule for wind and solar. The current rule sets the RA value of wind and solar resources based on the average production of each resource over the summer on-peak period – noon to 6 p.m. on weekdays – the hours when electric demand in California peaks. Yet the PD characterizes our position as follows: “[the] proponents of maintaining the status quo emphasize the need to assure reliability during off-peak periods.”<sup>5</sup> This statement does not accurately reflect our joint position. The current counting rule is based solely on the on-peak production of wind and solar units; it does not give any consideration to the production of such units in off-peak hours. The PD then proceeds to reject the current counting rule on the erroneous ground that its “off-peak emphasis” is incompatible with the goal of the RA program.<sup>6</sup>

More generally, the PD sets up a false dichotomy between the supporters of the current counting rule, who the PD characterizes as being concerned with reliability in “all hours,” and those proposing a change, who allegedly emphasize reliability in “peak hours.”<sup>7</sup> This characterization is not correct: the current counting rule does not consider wind and solar output

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<sup>5</sup> PD, at 50.

<sup>6</sup> *Ibid.*

<sup>7</sup> PD, at 48.

in all hours, it only considers output in a limited set of high-demand, on-peak hours. The current counting rule has been benchmarked to and validated by measures of the capacity value of wind in California that use rigorous reliability models to calculate the Effective Load Carrying Capacity (ELCC) of wind resources. The ELCC approach analyzes all hours, but this does not mean, as the PD seems to imply, that all hours somehow are weighted equally. In fact, the ELCC approach emphasizes renewable generation in the riskiest peak hours, when the loss-of-load-probabilities (LOLP) that the reliability model calculates are the highest. In off-peak hours, the LOLP is extremely low, and generation in such hours contributes little to the ELCC results.<sup>8</sup> Thus, it is incorrect to characterize either the current counting rule or the ELCC analyses to which it is benchmarked as emphasizing “all hours” over “peak hours.”

**B. The PD Does Not Discuss Why the Commission Should Reject the Industry-Standard “Best Practice” Method – a Method That the Commission Has Adopted for a Similar Use in the RPS Program – In Favor of a Completely *Ad Hoc* Approach That Is Not Supported by the Record.**

The record in this case shows that the state-of-the-art methodology for determining the contribution of a renewable generator to system reliability is the ELCC approach. The California Energy Commission’s (CEC) multi-phase study of the integration of renewable resources into the California grid, conducted from 2003 - 2006, (the “CEC Integration Study”) found the ELCC approach to be “the best method for determining capacity value of intermittent generators.”<sup>9</sup> CalWEA and AWEA have demonstrated in this case that the ELCC results for

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<sup>8</sup> For example, Table 1 of the CalWEA/AWEA January 15 Proposal shows that just 1.3% of Southern California Edison’s (SCE) loss-of-load expectation falls in the off-peak hours, even though these hours constitute 60% of the hours in the year.

<sup>9</sup> The full, 3-year Final Integration Study is available on the CEC website at [http://www.energy.ca.gov/pier/project\\_reports/CEC-500-2006-064.html](http://www.energy.ca.gov/pier/project_reports/CEC-500-2006-064.html). The Phase 1, one-year report is available at [http://www.energy.ca.gov/reports/2004-02-05\\_500-03-108C.PDF](http://www.energy.ca.gov/reports/2004-02-05_500-03-108C.PDF). The Integration Study was prepared by Brendan Kirby of Oak Ridge National Laboratory (ORNL), Michael Milligan of the National Renewable Energy Laboratory (NREL), Yuri Makarov and David Hawkins of the CAISO, and Kevin Jackson and Henry Shiu of the California Wind Energy Collaborative at the University of California, Davis. Messrs. Kirby and Milligan are leading U.S. researchers on renewable integration issues, and the remaining authors have considerable expertise on the technical aspects of operating the California grid and on wind generation in California.

California wind resource areas (WRAs) from the CEC Integration Study validate the accuracy of the current RA counting rule.<sup>10</sup> As discussed further below, the Commission has adopted the use of these ELCC results in other contexts where the capacity value of intermittent renewables must be measured. Finally, we urge the Commission to admit the NERC Special Report into the record so that the final order on this issue can benefit from NERC’s recommendation on what clearly is becoming the industry standard approach for evaluating the RA value of intermittent renewables. The PD fails to address the information in the record documenting the industry’s “best practice” approach to this complex issue.

The PD also ignores the fact that the Commission has adopted, and continues to use, ELCC results for the capacity value of intermittent resources in contexts other than the RA program. For example, the Commission has assessed the capacity value of wind resources in designing the “least-cost, best-fit” (LCBF) analysis used to evaluate bids from new renewable projects submitted under the RPS program. In Decision (D.) 03-06-071, the Commission directed the utilities to assess the capacity value of intermittent renewable resources using the ELCC results from the CEC Integration Study. As a result, in D. 04-07-029, the Commission adopted the ELCC approach in determining the capacity value of wind resources, and characterized the approach as “a refined method of calculating capacity that captures its value in relation to system demand.”<sup>11</sup> Decision 04-07-029 emphasized that the CEC Integration Study’s ELCC value of 24% of nameplate capacity for wind resources should provide “a lower bound to the capacity value a utility should impute to a wind resource bid into its RPS solicitation.”<sup>12</sup> Thus, the Commission has endorsed the use of the ELCC analysis presented in the CEC Integration Study as a conservative measure of the capacity value of wind resources under the RPS program.

Yet the exceedance method chosen in the PD would result in the contradictory conclusion

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<sup>10</sup> CalWEA / AWEA, January 15 Proposal in this docket, at Table 2.

<sup>11</sup> D. 04-07-029, at 19-20.

<sup>12</sup> *Ibid.*, at 20 (emphasis added).

that California wind resources have a capacity value of just 3% of their nameplate capacity,<sup>13</sup> far less than assumed in the RPS program for bid evaluation. This conflict is certain to cause uncertainty and create additional risks for developers of wind and solar projects for the California market. The PD fails to recognize or to address this conflict.

**C. The PD Does Not Discuss Why It Rejects a Counting Rule That Is Similar to the Methods Used in Other Major U.S. Control Areas.**

The record in this proceeding has extensive information concerning the methods used to assess the RA value of intermittent renewables in other major control areas in the U.S., as well as the method that is now considered to be “best practice” in the industry.<sup>14</sup> The PD does not evaluate, or even discuss, this important information. Many of the major U.S. control areas also are experiencing significant growth in the installed capacity of intermittent technologies, particularly wind, and have implemented their own rules to count the capacity value of these resources. The PD does not address the valuable experience and practices of the other major control areas in the U.S., which are clearly of material importance to the decision before the Commission.

CalWEA and AWEA presented a chart in their January 15 proposal, which shows that five major control areas (CAISO, PJM Interconnection, New York ISO, New England ISO, and the Mid-Continent Area Power Pool) set the capacity value of wind based on average wind output during an on-peak period.<sup>15</sup> Only one control area, the Southwest Power Pool (SPP), uses an “exceedance” method such as the approach proposed in the PD, and SPP uses this approach

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<sup>13</sup> The 3% figure reflects the CEC staff’s analysis of CAISO / SCE / SDG&E 70% exceedance proposal. As discussed below, the PD adopts an adjustment to this proposal to reflect the statewide diversity of aggregated wind and solar output. This adjustment will raise the 3%, but it is not known by how much.

<sup>14</sup> For example, Attachment A to the CalWEa/AWEA January 15 Proposal is the most recent update of an ongoing study by the National Renewable Energy Laboratory (NREL) that reviews how various U.S. control areas and utilities have determined the capacity value of wind resources.

<sup>15</sup> This table is based on M. Milligan and K. Porter, “The Capacity Value of Wind in the United States: Methods and Implementation,” *The Electricity Journal*, volume 19, issue 2 (March 2006), at 96. This is a version of the Milligan / Porter work referenced in the Energy Division’s *2007 Resource Adequacy Report*, at Table 14, and in Table 3 of the CalWEA/AWEA January 15 Proposal.

only for long-range planning, not for operational purposes such as setting year-to-year reserve margins. The control area with the most installed wind capacity, ERCOT, recently moved away from an exceedance-type approach and has adopted the use of an ELCC calculation. Thus, today there are no control areas in the U.S. that use an exceedance method for setting the resource adequacy value of intermittent renewables. If California is to adopt an approach to valuing the RA capacity of wind and solar that is used nowhere else in the U.S., the Commission should explain why such an idiosyncratic approach, recently rejected by an area (ERCOT) that has a greater penetration of intermittent resources, is appropriate for California.

**D. The PD Does Not Assess Whether the Cost of Occasional Backstop Procurement Exceeds the Costs of New RA Capacity in All Months.**

The 70% exceedance method proposed in the PD would result in the substantial de-rating of the state's wind and solar resources. For example, if the state has a nameplate capacity of 10,000 MW of installed wind resources, and the annual average RA value of wind is de-rated from 24% to 3% of nameplate, the utilities would have to procure 2,100 MW of additional capacity to backstop the wind generation. A comparable de-rating, as a percentage of nameplate capacity, would occur for solar. Because these are annual average RA values, this capacity would have to be procured in every month. The potential cost of this backstop capacity is why this is a significant ratepayer issue.

The PD acknowledges these increased costs, but attempts to dismiss them by arguing that the goal of the RA program is “reliability at least cost,” not “least cost.” Frankly, we fear that the result of the PD's approach will not be “reliability at least cost,” but an excessive quantity of capacity, beyond that needed for reliability, and at an unnecessarily high cost. The Commission has indicated clearly that, in developing the RA Program, “reliability at any cost” is not a policy option that it will pursue.<sup>16</sup>

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<sup>16</sup> The Commission stated in D. 05-10-042, at page 8:

Finally, the Commission noted that the traditional utility role in procurement included the responsibility to provide reliable service at least cost, and that this is one of the “same issues” of traditional resource procurement that RAR seeks to address. Thus, the

It is obvious that the backstop capacity acquired as a result of de-rating wind and solar resources will be idle during the 70% of hours in which aggregate wind and solar generation will be greater than their RA capacity set using the exceedance method. Beyond that, however, there is no easy way to assess by how much the exceedance method will over-procure capacity, because the CAISO chose the 70% exceedance level as a rule of thumb, and has admitted that its choice was “somewhat subjective.”<sup>17</sup> The CAISO has made no effort to benchmark the RA values that result from its exceedance approach to a more rigorous ELCC evaluation based on a specific metric of system reliability, such as the typical standard of one day of outage in ten years.

The PD argues that the current counting rule also could result in ratepayers incurring additional procurement costs, if wind and solar resources do not produce at their RA capacity during a peak period and the CAISO is forced to incur added costs through its backstop procurement mechanisms. However, this scenario would occur only if the 15% planning reserve margin is exhausted, a far less likely occurrence than the 100% certainty of the higher RA costs that would result each month if wind and solar resources are de-valued as the PD proposes. It does not save money for ratepayers to procure more than they need every month to avoid the limited procurement that may be needed in highly unusual events. If the Commission is to discharge its obligation to ratepayers, it should not adopt the PD without a serious assessment of the added costs that would result from the exceedance approach. The Commission should not just dismiss these cost concerns, as the PD does, because there is an unspecified chance that the current rule also could result in an uncertain and unexamined amount of added costs. The Commission should seek to weigh the costs and benefits of each approach, choosing the path that benefits ratepayers with the best balance of reliability and cost.

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concept embodied in the phrase “reliability at any cost” is not a policy option. Ultimately, measures that are proposed to promote greater grid reliability should be evaluated by weighing their expected costs against the value of their expected contribution to reliability.

<sup>17</sup> CAISO Opening Comments in Phase I of R. 08-01-025, at 5. The CAISO made the same admission at the Phase II workshop this year. *See* Workshop Report, at 18.

**E. The Parties Have Not Been Able to Review Any Quantitative Results for the Modified Exceedance Method Proposed in the PD.**

The Joint Renewables Parties appreciate the efforts of CEC staff to provide analytic support to the parties during Phase II.<sup>18</sup> These laudable efforts are undermined by the PD: first, it is not clear from the PD that the ALJ even considered the CEC’s analytic work; second, the PD adopts a variant of the CAISO’s 70% exceedance method for which no analysis is currently available to the parties. Specifically, the PD adopts the CAISO’s methodology, but also approves a diversity adjustment based on the aggregate wind and solar production for the entire state. To our knowledge, the CEC staff has not calculated a diversity adjustment at this level of aggregation. As a result, at this point neither the parties nor the Commission know what QCs for intermittent renewables would result from the PD’s new proposal. This is another reason why, before deciding this issue, the Commission needs to take additional time to develop a complete record, including calculations of the bottom-line QC values for the approach proposed in the PD, on all of the options for the RA counting rules for intermittent renewables.

**F. CalWEA/AWEA/SA Did Not “Propose,” and Do Not Support, the Variant of the Exceedance Method That the PD Would Adopt.**

The PD states that it is adopting “the CalWEA / AWEA / SA proposal to aggregate the diversity benefits of solar and wind generation to recognize the complementary profiles of these resources.”<sup>19</sup> Although the Joint Renewables Parties noted the importance of recognizing the diversity benefits of aggregated renewable generation, the PD’s application of this concept out of context should not be termed a “proposal” from CalWEA, AWEA, and SA. These parties criticized the exceedance method for failing to reflect the full diversity benefits of the state’s

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<sup>18</sup> In particular, CEC staff has attempted to provide comparative analyses of each party’s proposal for the RA counting rule for wind and solar, in an effort to allow parties to understand and to compare the bottom-line results of each proposal. Regrettably, this effort has not been entirely successful, as some parties have complained about the lack of access to the CEC data and an inability to verify the CEC’s numbers. *See* TURN’s February 27 Reply Comments, at 8-9. The PD acknowledges that the CEC’s data on the nameplate capacities of existing RA resources is suspect and needs further scrutiny. PD, at 53.

<sup>19</sup> PD, at 52.

aggregated wind and solar generation, and estimated the magnitude of this problem. The PD's acceptance of this criticism and attempt to fix this one failing (among many) of the exceedance method should not be construed as adoption of a proposal by the members of the Joint Renewables Parties such that the overall method is acceptable. We observe that such a diversity adjustment is not needed with the current counting rule, which incorporates diversity by averaging output across all of the peak hours. The Joint Renewables Parties do not agree that the PD's revised exceedance method is superior to the current rule simply because one of its many defects has been remedied.

**G. The PD Fails to Consider LSA's Proposal to Change the Method of Calculating the QCs for New Solar Technologies.**

The PD does not address a significant issue that LSA raised in its comments concerning the treatment of new solar projects. LSA's opening comments note that 5 GW of solar capacity is proposed for development in California with the potential to come on-line in the coming years; the reply comments of CalWEA/AWEA/SA note that one-half of this capacity may be new solar photovoltaic technologies that historically have not supplied power at the wholesale level.<sup>20</sup> The PD adopts an approach to the RA value of new solar projects that uses TAC-level data on historical solar generation to establish the initial RA values for new solar projects.<sup>21</sup> This historical data reflects the output of less than 400 MW of existing solar thermal generation that has been on the system since the 1980s. The operating characteristics of these older solar plants are unlikely to resemble the new solar technologies that will be coming on-line, thus effectively penalizing technological innovations and ignoring the distinguishing characteristics of the new solar capacity additions, until a full three years of actual operating data is available.

To remedy this new problem, LSA proposed that the QCs for new solar projects should be based on projected output using location-specific solar insolation data plus project-specific

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<sup>20</sup> LSA Opening Comments, at 5; CalWEA/AWEA/SA Reply Comments, at 3-4.

<sup>21</sup> PD at Appendix C. A new project's first year values would be entirely administratively determined, with the actual operating data that becomes available in subsequent years averaged into the three-year rolling averaging mechanism.

operating parameters. Once a solar project comes on-line, the projected output can be replaced over a three-year period with actual production data. The PD fails to address this proposal, much less provide a rationale rejecting it in favoring of the Appendix C approach. The Joint Renewables Parties are concerned that a reliance on historical data from decades-old solar thermal technology will penalize innovation, fail to reflect the significant enhancements in solar technology that are expected to come on-line in California over the next several years, and create unfounded and inaccurate expectations that will distort RA procurement, thus neither promoting reliability nor increasing cost efficiency.

Finally, the PD's proposed procedure for setting wind and solar QCs, as set forth in Appendix C, appears to set the QCs for new solar resources based on a combined statewide calculation of the QCs for both solar and wind resources.<sup>22</sup> This would further penalize new solar resources through the use of a statewide QC that also reflects the much different operating profile of wind resources. For all of these reasons, the PD should be modified to adopt LSA's proposal for the QC calculation for new solar projects.

**H. The PD Does Not Address Whether the Continuation of the MCC Buckets Justifies the Retention of the Current RA Counting Rule for Wind and Solar.**

In Phase II, LSA raised the point that the current provisions limiting the Maximum Cumulative Capacity (MCC) for use-limited resources (ULRs) such as wind and solar ensure that there is not an over-reliance on these intermittent resources for RA purposes.<sup>23</sup> As a result, there may be no need to change the current RA counting rule for these resources. The PD decides to retain the MCC "buckets," but fails to address whether this decision removes the need to change the RA counting rule for wind and solar. The PD's discussion of the MCC issue, at pages 17-18, runs completely contrary to its logic in adopting the highly restrictive exceedance method to count the RA value of intermittent resources:

In adopting the MCC approach, D.05-10-042 noted that it was proposed to alleviate over-reliance on ULRs that could not be counted on to serve a large

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<sup>22</sup> See Steps 2, 4, and 6 in Appendix C.

<sup>23</sup> See LSA's January 15, 2009 Proposal, at 3-4.

portion of a month outside of the peak period. (D.05-10-042, at 44.) Thus, the MCC bucket approach can be seen as an important reliability measure. As SDG&E notes, if too many ULRs are included in the RA mix, there arises at least a theoretical possibility that the CAISO-operated system could become energy deficient, especially in years when imported hydro generation is low, weather is hotter than normal, and one or more nuclear plants have unexpected outages. The MCC bucket approach can also be seen as a cost-saving measure because it allows for the prudent use of ULRs to make up the RA fleet.

Thus, the PD views the MCC Buckets as “an important reliability measure” because they ensure that resources will be available to serve loads “outside of the peak period,” and will reduce the cost of RA compliance. Yet a few pages later, the PD rejects any consideration of an RA counting rule for intermittent renewables that is not tightly focused on “peak periods” or that considers the costs of backstop procurement if wind and solar resources are severely de-rated. The PD should be revised to recognize LSA’s point that the MCC Buckets allow retention of the current RA counting rule, because they will limit any over-reliance on energy-limited or intermittent resources.

#### **I. The PD’s Adopted Exceedance Method Discriminates Unfairly Against Intermittent Renewable Technologies.**

The PD ignores the concern of the Joint Renewables Parties, expressed repeatedly in both phases of this case, that the exceedance method would result in discriminatory treatment of intermittent resources compared to other resource types. In essence, the exceedance approach de-rates wind and solar capacity twice: first, by using the actual capacity factor of intermittent generation over a peak period and, second, by applying an exceedance factor that ignores all energy that cannot be produced at the 70% - 80% capacity factor of a traditional baseload plant. For wind, this double de-rating in the exceedance method results in QCs far below the ELCC value of wind calculated in the CEC Integration Study. In many hours, wind generation will produce at levels far higher than these very low QCs, but all of this power is assumed to make no contribution to reliability, even though a rigorous ELCC analysis shows that this above-QC power contributes to system reliability.

The exceedance method treats wind and solar in a fashion that is significantly different

from that used for the RA counting rule for fossil-fueled thermal resources, yet the PD has not justified such a discriminatory approach. The QC for thermal generation is based on a unit's PMax, its maximum performance capability, without any de-rating for ambient conditions, forced outages, or actual performance during peak periods. Yet the output of all electric generating technologies varies with ambient conditions; to a degree, all electric generators are subject to intermittent capacity reductions. In reality, the capacity of new, dry-cooled combined-cycle plants will be de-rated by about 10% as temperatures increase from 60F to the 100+F routinely experienced on hot summer days in California, when electric demands peak.<sup>24</sup> In addition, such plants can have forced outage rates of 5%.<sup>25</sup> Thus, even the newest thermal units may operate during heat waves at capacity factors that are 10% - 15% below their QCs. The intermittency of California's thermal generation will increase in the future, as environmental and water-use concerns restrict the use of the more efficient once-through or wet cooling methods. Because the amount of installed thermal capacity in California is very large, the total variability of thermal resources is certainly larger than the variability of today's installed solar and wind capacity or of the intermittent renewables that are expected to come on-line in the next year or two. Although the Commission has begun the process to review the impact of ambient conditions on thermal QCs (and this issue was discussed at the Phase II workshop), the PD makes no further progress on this issue.

Today, the "intermittency" in the output of thermal units is accommodated in the 15% planning reserve margin (PRM), even though the amount of installed thermal capacity in California is very large. In contrast, the exceedance proposals for intermittent renewables would force the QCs of individual wind and solar plants to include virtually all of the worst-case reductions of their output due to ambient conditions. In other words, the 15% PRM is reserved

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<sup>24</sup> The California Energy Commission published a study in 2006 on water use at power plants in California that includes this information on the de-rating of dry-cooled CCGTs in California. See "Cost and Value of Water Use at Combined-Cycle Power Plants" (CEC Publication CEC-500-2006-034, April 2006), at 21-23 and Figure 8.

<sup>25</sup> The CPUC's current market price referent assumes a forced outage rate of 4.6% for a new dry-cooled CCGT. See Resolution E-4118, at 13.

solely to accommodate thermal intermittency, and not renewables intermittency. For example, the CAISO exceedance method would set wind QCs as low as just a few percent of installed wind capacity. Wind generation thus would receive virtually no benefit from the 15% planning reserve margin, even though the amount of wind capacity in California is still relatively modest. By denying any benefit of the 15% PRM to wind and solar resources, such a result clearly would discriminate unfairly against intermittent renewables, compared to the comparable treatment of thermal generation in the RA program.

### III. Conclusion

The Joint Renewables Parties appreciate the Commission's attention to these opening comments on the PD. We look forward to working with the Commission to adopt an RA counting rule for intermittent renewables that (1) supports the major commitment that the state has made to develop these resources, (2) is based on state-of-the-art, best-practice analytics, not "somewhat subjective" rules of thumb, (3) achieves reliability at least cost, (4) and does not discriminate against the use of California's abundant wind and solar resources. To that end, and in accordance with Rule 14.3(c), we have attached to these comments a list of revised findings of fact and conclusions of law that are consistent with the recommendations that we have presented in this proceeding.

Respectfully submitted,

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June 4, 2009

## Revised Findings of Fact and Conclusions of Law

### Findings of Fact

15. The current QC counting rule for intermittent resources has been benchmarked to rigorous ELCC studies of the capacity value of renewable generation in California, and thus has a clear nexus to a well-defined reliability standard.
16. Setting the QC for intermittent renewables using the average output over an on-peak period of high-risk hours is consistent with the approach used in other major U.S. control areas.
17. The current QC counting rule for intermittent resources provides those resources with an equitable share of the benefits of the 15% planning reserve margin, compared to other types of resources.

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### Conclusions of Law

4. The RA program should be modified with respect to (a) new resources whose anticipated commercial operation date is after the date for annual compliance filings, (b) CAM allocations, (c) LI protocols for DR resources, (d) transparency in the DR capacity credit allocation process, and (e) scheduled outages for resources whose NQC is calculated using a rolling average, ~~and (f) the Joint Proposal for counting the QC of intermittent wind and solar resources should be adopted with a 70% exceedance factor and with modifications to aggregate the diversity benefits of wind and solar resources and to incorporate the locational diversity benefit of aggregating intermittent resource on a statewide basis.~~

## CERTIFICATE OF SERVICE

I hereby certify that I have this day caused to be served a copy of the foregoing document, **OPENING COMMENTS OF THE CALIFORNIA WIND ENERGY ASSOCIATION, THE AMERICAN WIND ENERGY ASSOCIATION, THE SOLAR ALLIANCE, AND THE LARGE-SCALE SOLAR ASSOCIATION ON THE PROPOSED DECISION OF ALJ WETZELL**, by Electronic Mail where possible and First-Class Mail where not, on all known parties to R. 08-01-025, 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, Thursday, June 4, 2009.

/s/ Christa Goldblatt

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