



## **DRA**

*Division of Ratepayer Advocates  
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**VIA E-MAIL: IRRP@CAISO.com**

California ISO  
P.O. Box 639014  
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Attention: Interconnection Standards Review for Renewables Initiative

**Re: COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION ON CAISO'S INTERCONNECTION STANDARDS REVIEW FOR RENEWABLES INITIATIVE DRAFT STRAW PROPOSAL DATED MARCH 25, 2010**

### **I. INTRODUCTION**

The Division of Ratepayer Advocates of the California Public Utilities Commission (DRA) appreciates the opportunity to comment on the Draft Straw Proposal of the Interconnection Standards Review Initiative, issued on March 25, 2010, and first discussed at a stakeholder presentation teleconference on February 19, 2010 and discussed further at a stakeholder meeting/teleconference on April 1, 2010 ("Proposal"). DRA has a statutory responsibility to advocate for the ratepayers of the State of California in order that they obtain the lowest possible rate for service consistent with reliable and safe service levels.<sup>1</sup>

CAISO has commenced work on this initiative to promote the continued reliability of the CAISO controlled grid during the expected process of integrating a large increase in renewable energy's contribution to California's total generation portfolio. CAISO's stated intent in accomplishing this objective is to "refine a limited number of interconnection standards for large generating facilities (power input to the grid equal to or greater than 20 MW)." CAISO staff has stated their intent to finalize any "refinements to the interconnection standards by the end of April 2010 and seek CAISO Board of Governors approval in May 2010 and subsequently file any necessary changes to the Large Generator Interconnection Agreement (LGIA) portion of the CAISO Tariff with FERC." CAISO staff has established an "accelerated timeline" for this initiative.

DRA is concerned that the Proposal imposes new and substantial requirements on renewable project proponents that will be expensive to implement or impossible to achieve. The industry standards process, which includes a peer technical review

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<sup>1</sup> California Public Utilities Code Section 309.5(a).

opportunity, is the best approach for addressing the impacts of renewable integration. While understanding the time pressure and CAISO's desire to respond to this issue, DRA recommends that the CAISO proceed cautiously and carefully in imposing the requirements contained in the Proposal. The Proposal also goes far beyond refining a limited number of interconnection standards by proposing Future Analysis including studies into inertial response, AGC participation, under frequency response, and others that are not of immediate concern. These concerns should be addressed by the National Standards Bodies. While DRA recognizes the CAISO's responsibility to maintain the reliability of the CAISO controlled grid and to promulgate necessary requirements to achieve this objective, the CAISO is not an accredited standards developer. Use of the term "standard" should not be used in the Proposal or subsequent documents unless reference is made to material developed by an accredited standards developer.

## II. DISCUSSION

### **A. Recommend Change of Initiative and Straw Proposal Titles: As described in the Proposal, the Scope of the Initiative is much larger than a review of Interconnection Standards. Suggest "Develop Interim Interconnection Requirements."**

DRA's concerns are as follows:

- The title of the initiative does not reflect the existing scope of the initiative. The scope of the initiative should be limited to what is immediately needed to support the need to accommodate potential funding of renewable projects?
- The title of the Proposal does not reflect the existing scope of the Proposal. The scope of the Proposal should be limited to what is immediately needed to support the need to accommodate potential funding.

### **B. Statements in Background Section Need Correction or Additional Information.**

DRA's concerns are as follows:

- Page 1, 2<sup>nd</sup> paragraph, line 4 – "area" should be replaced with "provide a power input to the grid that is".
- Page 1, 2<sup>nd</sup> paragraph, line 8 – "adopt uniform standards" should be changed to "develop uniform requirements" since uniform standards are unavailable.
- Page 1, 3<sup>rd</sup> paragraph, line 6 – "any standards developed" should be changed to "any requirements developed".

- Page 1, 4<sup>th</sup> paragraph, line 2 – CAISO states: “over 21,000 MW of variable generation capacity [in] its queue.” No reference is provided in the footnote.
- Page 1, 4<sup>th</sup> paragraph, lines 4, 5, 6 and 7 – “interconnection studies are complete, nearing completion or are being accelerated to finish by June 2010 . . .” CAISO should indicate how many projects are complete, how many projects are near completion when they will be completed, how many projects are being accelerated and when they will be completed.
- Page 1, 4<sup>th</sup> paragraph, lines 6, 7 – “accommodate potential funding opportunities . . .” How many projects are seeking funding under the American Reinvestment and Recovery Act?
- Page 2, Specific Schedule – DRA is very concerned that this schedule will effectively negate a meaningful stakeholder process. A Stakeholder comment due date is missing after the stakeholder conference call on April 21, 2010. This date should be added.
- Page 2, 2<sup>nd</sup> full paragraph, line 2 – “focus narrowly on the capabilities of the generating facilities and equipment specifications.” DRA concurs that this focus is essential. As discussed in the Stakeholder meeting of April 1, 2010, CAISO must provide a detailed description of the capabilities required. Without the technical details, equipment specifications for procurement cannot be developed.
- Page 2, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs including continuation of the 4<sup>th</sup> paragraph at the top of page 3 – “active power control.” This is a perfect example of the problem outlined in the previous comment. CAISO must address the Active Power Control requirements to be placed on Variable Resource Generators **without any delay**. This is a major technical issue for procurement and cannot wait “. . . until after a stakeholder process has resulted in identified market rules and procedures.” The last four-line sentence, in the continuation of Page 2, 4<sup>th</sup> paragraph, on Page 3, illustrates the need to address detailed capability requirements.

**C. Statements in the Scope, Applicability, and Summary of Proposed Recommendations Section Need Correction or Additional Information.**

DRA’s concerns are as follows:

- Page 3, paragraph B – The word “standards” is used. Since these are not industry standards the word “requirements.” should be used.

- Page 3, paragraph C, line 3 – “the ISO intends to explore the equity of exempting certain interconnection projects” on certain bases. CAISO must explore and define these exemptions now so that interconnection project developers have a full and complete understanding of the requirements for exemption. Paragraph C further states: “The proposed exemptions are discussed separately for each requirement.” DRA does not find any discussion on a project-by-project basis in the Draft Straw Proposal. DRA would agree that the Draft Straw Proposal might not be the appropriate place for a detailed discussion of the requirements for exemption, but this information must be developed without delay and provided to Project Developers.
- Page 3, paragraph E – This particular paragraph summarizes what is very problematic about the CAISO Proposal. The CAISO must work very closely with NERC and WECC to assure that the CAISO requirements developed using this proposal are as close as possible to future NERC and WECC standards that are under development. In doing so, CAISO must be sure not to include overly stringent and expensive requirements to “cover all the bases.” If and when such NERC and WECC standards are issued, they should not be applied retroactively to plants that have used the CAISO requirements.
- Pages 3, 4 and 5, Table – As presented, this table is extremely hard to use since the bullets do not line up and there are false row lines. This table should be corrected immediately and reposted for Stakeholder use.
- Pages 3, 4 and 5, Table, detailed comments, Page 3 portion, “What is in place today?”, 2<sup>nd</sup> Bullet – The current requirement from FERC Order No. 661a for a System Impact Study (SIS) justification is listed as a separate bullet. This is an integral part of the Wind Generator Power Factor requirement and should not be separated.
- Pages 3, 4 and 5, Table, detailed comments, Page 3 portion, “What is the proposal?”, 1<sup>st</sup> Bullet – The new acronym VER is used without definition. Please add the definition. Also, the same bullet contains the statement “Add some clarification about interpretation of 0.9lag/0.95 lead requirement.” Please add the clarification to the table or provide a reference to where it can be found.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is the proposal?”, continuation of 2<sup>nd</sup> Bullet on Page 3 and Paragraph 3.1.1, Page 5 – “asynchronous wind generators, solar PV) is 0.95 lag/lead, measured at

POI.” Since the voltage conversion system of the solar PV system is completely different than the wind generators, what technical basis is there for imposing the same requirement?

- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is the proposal?”, 1<sup>st</sup> Bullet – “Establishes a default power factor requirement for all resources.” This bullet appears to be associated with the first bullet in the column to the left that addresses the current requirement for a system impact study. What is the meaning of “default” and by that statement? Is CAISO intending not to follow FERC Order No. 661a that specifically requires a System Impact Study (SIS)?
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is the proposal?”, 2<sup>nd</sup> Bullet – “as per the recommendation in 1e), 1f), 1g) above.” 1e), 1f) and 1g) cannot be found. Please correct.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is in place today?”, 2) Voltage Regulation Requirements and Paragraph 3.2, Page 6 – “Article 9.6.2 of LGIA establishes the requirement for an Interconnection Customer (“all” generators) to maintain Voltage Schedules.” – DRA disagrees to the (“all” generators) interpretation by CAISO. Based on the preceding Article 9.6.1, Power Factor Design Criteria where 0.95 leading and 0.90 is specified, Article 9.6.2 is not referring to all types of generation, e.g., wind generators and solar PV.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is in the proposal?”, 3), Voltage & Frequency ride-through [R]equirements, 1<sup>st</sup> Bullet and Paragraph 3.3, Page 7 – “Recommend” should be deleted. Additionally, NERC PRC-024-1 is not presently a standard and should be identified as a draft 1 standard. A reference to the draft standard should also be provided in the table. However, using the draft NERC Standard for Voltage Ride-Through requirements is in direct conflict with FERC Order No. 661a which clearly only requires Low-Voltage Ride through. CAISO must resolve this conflict. Additionally, it appears that the NERC Draft Standard PRC-024-1 that is titled “Generator Frequency and Voltage Protective Relay Settings” may not even be applicable. In the Draft Standard’s Applicability Section 4.0, Facilities 4.2, the following statements are made: 4.2.1: Each generating unit (with installed voltage or frequency protective relays) greater than 20 MVA connected to the Bulk Electric System (BES). 4.2.2 Each unit (with installed voltage or frequency protective relays) at generating plants/facilities consisting of multiple units with total generation >75 MVA (gross aggregate nameplate rating) at the point of interconnection to BES.

- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is in place today?”, 3) Voltage & Frequency ride-through [R]equirements, 2<sup>nd</sup> Bullet – “Applicable Reliability Council”. This term is used in both the LGIA and in the Draft Straw Proposal. The word “applicable” doesn’t specify anything. The source of each requirement needs to be defined and referenced explicitly. “WECC’s frequency-ride through requirements is in the WECC Off-Nominal Frequency Plan.” DRA reads the WECC documents referenced by CAISO in 3.3.3.2 of the Draft Straw Proposal as being the “WSCC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan, Final Report, date November 25, 1997”. It appears that the contents this document have been recommended for adoption as a standard. There is no evidence that adoption has been accomplished. Thus, this is even less than a draft standard at this point. CAISO should coordinate with WECC to determine the current status on the document and schedule for adoption as a standard.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is the proposal?”, 3) Voltage & Frequency ride-through [R]equirements, 2<sup>nd</sup> Bullet – “Recommend that” should be deleted. The words “existing WECC requirement” should be replaced with the actual name of the WECC requirement and appropriate words describing the current status of the WECC standard development on this issue.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is in place today?”, 4) Generator Power Management Requirements, 1<sup>st</sup> Bullet – “7/7.2.3” is a typo. Should read “7.7.2.3.” 2<sup>nd</sup> Bullet, “Ramp Rate Limits & Control” and Paragraph 3.4.2, Page 13, “VER plants could have very steep ramp rates” – In the stakeholder meeting on the Presentation of this issue slides were presented that showed “steep” ramp rates. Additional information should be provided that describes the ramp rates expected.
- Pages 3, 4 and 5, Table, detailed comments, Page 4 portion, “What is the proposal?”, 4) Generator Power Management Requirements, 1<sup>st</sup> Bullet and Paragraph 3.4.1, Page 12 – “All VERs must install Systems that provide *active power management* including the capability to limit ramp rates and respond to over-frequency conditions.” Emphasis added. CAISO elaborates on what is meant by active power management in section 3.4.1, Page 12, of the Draft Straw Proposal. A detailed review of this section reveals that CAISO is planning to impose significant control requirements on VER Generation Plants some of which are not presently allowed by FERC Order 661a. CAISO sets the stage for these requirements in the first paragraph, line 8, by excluding “design limitations” from consideration as a physically impossible exception to complying fully and promptly with

[CAISO] dispatch instructions and operating orders. Design limitations must be included in consideration.

In the 2<sup>nd</sup> paragraph of section 3.4.1, CAISO elaborates further that VER plants must have the ability to control the active power output over the full range of potential output in response to a dispatch instruction or operating order. Further, VER generators will be required to be able to receive Automated Dispatch System (ADS) instructions from the ISO Control Center and adjust the active power output of the plant to address *any* grid reliability concerns. CAISO will also require the ability to remotely trip the plant off-line. This section ends with a statement that CAISO intends initiate a stakeholder process “to establish rules governing the circumstances and use of th[ese] feature[s] prior to beginning use of this requirement.” The materiality of this requirement is questionable at this time since all of these control features must be designed into the VER plants, if possible, now. It is unclear if the CAISO is considering the differences in type of generators and energy sources. This may result in significantly increased costs and the possibility of requirements being imposed that cannot be met.

If you have any questions regarding these comments, please contact Hank Pielage at [hhp@cpuc.ca.gov](mailto:hhp@cpuc.ca.gov).