Joint Comments of the California Wind Energy Association,
the Large-scale Solar Association, and Solar Millennium LLC
on Proposed Additional Renewable-Resource Interconnection Requirements

The California Wind Energy Association (CalWEA), the Large-scale Solar Association (LSA), and Solar Millennium LLC (SM) offer joint comments here on the following:

- "Interconnection Standards Review for Renewable Integration," a presentation outlining several CAISO-proposed additional interconnection standards that would apply to intermittent renewable generation (wind and solar plants) ("Proposal"); and
- A February 19th conference call to discuss the Proposal.

Comment overview: We strongly oppose the Proposal, for the following reasons:

- ***The CAISO "process" does not provide adequate opportunity for stakeholder input.***
- ***The Proposal elements are not defined enough for stakeholders to provide meaningful feedback.***
- ***CAISO studies to date do not support the Proposal elements.***
- ***The Proposal prejudges the outcome of the current NERC/WECC standards process and the recent FERC NOI, which cover the exact same areas.***
- ***The CAISO "one size fits all" approach reflected in much of the Proposal is illogical and applied in a discriminatory fashion.***
- ***The commercial impacts of the Proposal elements have not been adequately considered***, including adverse impacts on "fast track" Transition Cluster projects.

Each of these comments is explained further below.

The CAISO "process" does not provide adequate opportunity for stakeholder input.

- ***The issues have only been considered so far in a closed process.*** The CAISO cited, as a basis for its issue prioritization and proposals: (1) work done over the past two months by a group of "staff from PTOs, neighboring BAAs, and other technical experts;" and (2) research into "existing standards (and standards development activities) at other BAAs within and outside the U.S."

  The CAISO has not shared the identities of group members (including "technical experts") or any of the supporting data considered by the group. We understand that the group may have considered isolated input from selected generators, but none that we are aware of were involved in the assessment and prioritization process, and the process was otherwise entirely closed.

- ***The CAISO is not following its own stakeholder process.*** That process rightly begins with identification of the issues and the problem(s) to be addressed before proposals are developed, a transparent process that leads to a Final Proposal, and feedback from stakeholders at each step of the way. There is not even a written proposal yet – only a slide presentation; the CAISO has known the Transition Cluster study and LGIA schedule literally for years, and that schedule is no excuse for short-changing its usual reasoned and rational process.

The CAISO proposals are not defined enough for stakeholders to provide meaningful feedback. The only definite proposal is a requirement that generators install a "control package," but there is no information about what this would entail, e.g., the degree or type of "control" expected, and the kinds of equipment and other capability will be needed. Additional studies are recommended in other areas – e.g., Power Quality – but there is no definitive proposal to respond to here.

Moreover, though the CAISO has said that it proposes applying the new standards to Transition Cluster generation projects, the CAISO's intent is not clear with respect to: (1) other projects that are close to executing LGIAs, e.g., Serial Group projects whose studies are nearly or just completed; (2) generators with already-executed LGIAs; (3) generators with PPAs that may conflict with the proposed changes; and/or (4) generators connected to the distribution system.

CAISO studies to date do not support the Proposal elements. Two CAISO studies are most relevant to this discussion – the November 2007 ***Renewable Resources Integration Study*** and the ongoing 33% RPS studies.

- ***2007 Renewable Resource Integration Study:*** The CAISO cited this study on the February 22nd conference call to support its claim that "no one should be surprised" by the CAISO proposals in this effort. That study identified the need for additional generator ramping, intra-hour balancing, and Regulation services.

  However, these needs were identified in the context of additional CAISO purchases in the market, not additional physical requirements to be imposed on intermittent generators themselves. In fact, the study concluded that the then-existing generation fleet as a whole would be adequate to meet the identified needs through the market.

  The only requirements discussed for potential imposition on intermittent generators were possible Low Voltage Ride-Through (LVRT) capability for wind plants at zero voltage levels and the need to ensure that all generators (including intermittent generators) can follow CAISO dispatch instructions in an overgeneration situation, as required in the Participating Generator Agreement (PGA) – no mention of any particular compliance tools, e.g., a "control package."

- ***CAISO 33% RPS studies:*** The CAISO has been engaged for some time in a small-group study of CAISO system operating needs to accommodate a 33% RPS level. The CAISO has said that it plans to share the results of these studies with stakeholders through its usual open and transparent process, and gather stakeholder feedback and suggestions, before finalizing them. However, these studies are not yet complete.

The CAISO and stakeholders can only have a reasoned discussion on how best to meet any CAISO needs for additional operating capabilities only after such needs have been defined. There may be multiple options for meeting some or all the CAISO's needs, including:

- **Centralized CAISO actions**, including : (1) additional purchases of existing market products; (2) expanding participation in existing markets (e.g., CAISO initiatives to allow storage, demand-side, and intermittent-resource participation); (3) development of new markets (e.g., Fast Regulation); and (4) internal CAISO operating tools, e.g., better Day Ahead and Real-time intermittent-resource output forecasts (mentioned in the 2007 study);
- **Additional Load-Serving Entity (LSE) Resource Adequacy Requirements**, e.g., new RARs for quick-start and fast-ramping resources recommended in the 2007 study; and/or
- **Additional generator interconnection or operating requirements**, perhaps including some of those recommended by CAISO here, to the extent that they are both needed and cost-effective.

Instead of carefully considering the optimal mix of these actions (including the impacts of initiatives already planned or underway), the CAISO proposal jumps right to the last bullet point and presumes that: (1) the CAISO's needs have been identified; and (2) the proposed requirements are the best and most cost-effective way to meet those needs. Some additional requirements for generators might very well be appropriate, but not until after a careful consideration of the need for and extent of such requirements.

The Proposal prejudges the outcome of the current NERC/WECC standards process and the recent FERC NOI, which cover the exact same areas. NERC and WECC are already developing standards in many of the areas covered by the CAISO proposal. The CAISO proposes to include, in its interconnection agreements or other instruments where its requirements would be imposed, language that generators would have to comply with any later NERC/WECC requirements; however, it makes no sense to impose CAISO-specific requirements now and then also subject generators to the risk of additional expense later.

The NERC/WECC process is "deliberative" because unnecessary requirements should not be imposed, and all relevant aspects should be considered; uniform requirements are also easier for equipment manufacturers to accommodate. The CAISO should not unilaterally impose its own requirements without the orderly process used in the standards development process.

Likewise, the FERC NOI under RM10-11, issued January 21st, is designed to investigate issues associated with the integration of "Variable Energy Resources" (VERs), including such areas as Data and Forecasting, Scheduling, Day-Ahead Market Participation and Reliability Commitments, Balancing Authority Coordination, Reserve Products and Ancillary Services, Capacity Markets, and Real-time Adjustments. Included in these topics are questions on dispatch and curtailment of VERs and whether financial incentives should be implemented for VERs that can respond to dispatch instructions.

The CAISO "one size fits all" approach reflected in much of the Proposal is illogical and applied in a discriminatory fashion.

- ***It is illogical***, because the CAISO has long recognized that different generation technologies inherently have different characteristics that are reasonably accommodated in technical requirements and day-to-day operation.
- ***It is applied selectively***, to the disadvantage of renewable resources. For example, the CAISO is not proposing to apply these new rules to nuclear or hydro generators. The CAISO's argument that this is not necessary because they are not "variable" generators (not even a defined term) is irrelevant and ignores the fact that, when they do vary their output, the variations (and impact on the system) can be quite severe.

The commercial impacts of the Proposal elements have not been adequately considered. These impacts include timing and financing complications that would be particularly problematic for "fast track" Transition Cluster projects seeking to qualify for funding under the American Recovery and Reinvestment Act of 2009 (ARRA), which will have to arrange financing immediately upon LGIA execution**.** The impacts could include, for example:

- ***Delays in LGIA execution:*** Requirements for additional equipment and/or operational capability could necessitate modification of the plant design, delaying LGIA finalization and execution. This could delay both plant financing and thus plant construction, which must begin by December for fast-track projects.

- ***Other financing complications:*** The proposed requirements could impair existing generator ability to cover current financial obligations, and new-generator ability to obtain financing for plants under development (including fast-track Transition Cluster projects), through:
  - **Revenue uncertainty and/or reduction:** Payments under nearly all intermittent-resource PPAs are "energy-only," i.e., the plant owner only gets paid under the PPA when the plant produces energy. CAISO proposals that could reduce their energy production – e.g., requiring such resources to provide Regulation (especially with the RA A/S Must-Offer Obligation), limit their ramp-ups, or otherwise restrict production would directly impact their revenues. Moreover, because the CAISO 33% RPS studies have not been completed, it will be impossible to estimate the frequency or extent of the reductions.

    Likewise, because the CAISO has not determined the other market changes that should be made, it is not clear whether or how there will be any opportunities to recover lost revenues (or costs) through market mechanisms or reformulated PPAs. Intermittent resources should be compensated for providing additional Regulation, ramping capability, and voltage support to the system. In fact, the CAISO might incent the kinds of behavior it is seeking on a voluntary basis by proceeding with its already-planned initiative to increase intermittent-resource flexibility in existing CAISO markets, e.g., through allowing economic bids on PIRP schedules, lowering the decremental-energy bid-floor price, and facilitating Day Ahead scheduling.
  - **Cost uncertainty and or increases:** The CAISO requirements are so vague at this point that it is impossible to estimate the potential additional costs they might impose, as discussed above. Plants with already-executed PPAs would have little or no opportunity to cover their costs, so the new requirements would simply reduce expected financial returns (for new plants) and ability to cover financial obligations (for new and existing plants).