

**Stakeholder Comment Template**  
**CAISO Integration of Renewable Resources (IRR)**  
**January 13, 2009 Stakeholder Conference Call**

<b>Organization:</b> Southern California Edison	<b>Date Submitted:</b> 1-20-2009
---	----------------------------------

<b>Organization Representative:</b> Gary Chen	<b>Contact Number:</b> 626-302-7214
---	-------------------------------------

**Industry Segment:** Load Serving Entity, Generator, and Participating Transmission Owner

Last Tuesday, the CAISO presented to stakeholders details of its CAISO’s “Existing Fleet” 20% RPS Study, explaining its scope and methodology and describing some draft results. The CAISO also discussed its 2009 Integration Study Efforts. SCE offers the following comments on these two efforts.

**“Existing Fleet” 20% RPS Study**

- Operational violations may occur during low load conditions and also during the time of maximum energy produced by the renewable resources. For these instances, please provide the NERC operational violations that may occur. It would be helpful to understand the number of times these violations occur, along with their magnitude, duration, and expected monetary penalty from NERC. Further, for each of these penalties, it would also be helpful to provide multiple potential solutions on how to mitigate these violations; the cost of the mitigation measures; and identify any technical, policy, and regulator challenges.
- If additional incremental resources are needed from an operational perspective, SCE suggests that the CAISO determine the MW amount, type needed (quick start, fast ramping, etc) for SP-15 and NP-15 separately.
- Slide 15: A forced ranking by using penalty costs is problematic as although it it’s required to generate a solution, it will raise a lot of questions about the costs used and their relative ranking. A thorough explanation of the rationale needs to be incorporated into the report.
- Slide 32: Regarding the ranges for Reg-Down and Reg-Up, it was mentioned during the call that lower number is from 2006 and that the higher number is that required in 2012. However, this isn’t clear from the presentation.
- Slide 47: While PGEs hydro may be the prime resource, assumptions about the reality of the flexibility of SCEs hydro (ie Big Creek and especially Eastwood)



should also be assessed as there are many water management issues.

- Slide 48: The second bullet point seems to imply that the characteristics of the 3200MW assumed to be added are the same as 3200MW of retirements. This may not be true with regard to the services that they can provide.
- Slide 49: Regarding the statement, “Update violation penalty factors so that load is shed before spin is violated,” SCE understands that the load can not be dropped during normal operations, single contingencies and during double contingencies only the controlled load dropping is allowed. Therefore, the above statement needs to be revisited before the CAISO determines the solution to the 20% RPS challenge.

## 2009 Integration Study

- The CAISO needs to clearly state the objective of this study. Is it policy driven, market driven, or investment driven? It may be difficult to achieve all three objectives as some of these objectives may counteract with other objective(s). SCE suggests that the CAISO make the objective of this study as “Least cost operational study to maintain the reliability of the CAISO system.”
- SCE suggests that this study be scenario-based. Consider scenarios like once through cooling (OTC), challenges associated in siting and licensing new generation and transmission, etc. Also it is difficult to predict the future mix of resources that may exist in the CAISO system so it will be necessary to attempt to create adverse scenarios to test the robustness of the grid.
- SCE understands from the call that Plexos will not be able to develop a full network model for this study. How will the CAISO be able to study the full impact of the integration of 33% RPS on the transmission system? PG&Es efforts to estimate ramping, Ancillary Services, etc. may not pick up load flow and other grid impacts
- The study should provide guidance on how to mitigate large amounts of renewables under worst case as well as best case system conditions, rather than under the expected favorable system conditions and thus perhaps erroneously concluding that the system can accommodate 33% without substantial mitigation. Accordingly, the study should also provide specific and numerical guidance on what and how much mitigation is required to accommodate various amounts of renewable energy. For example, to deliver 1,000 MW of wind generation would require X MW of peaking generation for meeting acceptable load following, ramping and regulation requirements and so on for higher levels (up to 33%) of renewable generation.



- The study should be coordinated with other ongoing and new work such as that just starting up within the newly formed WECC Variable Generation Subcommittee.
- Due to recent Senate Bill 42 (SB 42), the CAISO should include the OTC proposal into the study to assess transmission constraints associated with retiring OTC units in addition to adding new renewables.
- The integration of renewable resources may increase the demands for ancillary services, which in return may affect the scarcity pricing of such products. Therefore, SCE recommends the CAISO to evaluate scarcity pricing to avoid unnecessary adverse impact to the CAISO market prices.