Central California Clean Energy Transmission Project (C3ETP)
CAISO Observations on Preliminary Reliability Analyses

C3ETP Stakeholder Meeting, April 24th, 2008, Folsom CA

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The CAISO’s Integration of Renewable Resources Report dated November 2007 describes the need for full utilization of the Helms Pump Storage plant.

“The increased availability of pump storage facilities (3 pump operation at Helms) can provide needed night time load to accommodate the increased amount of off-peak wind generation.”

“Additional storage capability on the system would help to mitigate both over-generation and large ramp conditions. For example, upgrading the transmission system to the Fresno area would allow frequent use of the third pump at the Helms Pump Storage plant. The third pump adds 300 MW of additional load to the system, which could help to absorb the increased wind generation at night and during light load periods.”

“Both the GE studies and the California ISO studies have shown that operation of three pumps at Helms will help to mitigate the potential future over-generation problems.”
PG&E’s Preliminary Study Results

Existing System (Alternative 1),

and Alternative 10, new local generation,

cannot accommodate full Helms pumping load during the study period of 2010 and beyond.
SCE’s Preliminary Study Results

SCE’s existing transmission system serving load in the San Joaquin Valley is inadequate.

- SCE studies for CAISO expansion plan process show deficiency beginning in 2015.

SCE has identified a transient voltage stability problem on their San Joaquin/Big Creek transmission system.
Existing transmission Systems in PG&E’s Fresno Area and SCE’s San Joaquin Valley area will soon be inadequate.

The Magunden-Rector 230 kV, SCE Alternative 1 appears to be ineffective at mitigating the identified transient voltage problem.

The Big Creek 230 kV tie, SCE and PG&E Alternative 6, appears to be marginally effective at allowing full Helms Pumping capability.

All other 230 kV alternatives (5, 7, 8, 9, and 10) appear to be marginally or not at all effective at allowing full Helms Pumping capability.
CAISO Observations on Preliminary Results

PG&E and SCE 500 kV alternatives 2A, 2B, 2C, 3, and 4 appear to be most effective at allowing full Helms pumping and mitigating the transient voltage problem.

These six alternatives consist of a 500 kV transmission line that would provide a new interconnection between these two systems.