

**Addendum to
the “CRR Study 2
Final Scenario Assumptions” Document
Released on July 19, 2004**

By



CALIFORNIA ISO

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1 Introduction

On July 19, 2004 the California CAISO released the “Final Scenario Assumptions for CRR Study 2.” That document, which was the culmination of many months of work on the part of CAISO staff and Market Participants, described the methodology, assumptions and specific scenarios for CRR Study 2. The assumptions built into the document reflected much of the thinking related to the way CRRs might be implemented under MRTU. Since that document was released, a number of stakeholder discussions have occurred in various forums. This has led to additional thoughts and ideas with respect to how various aspects of CRRS might be implemented under MRTU and has culminated in the following addendum to the July 2004 paper.

The purpose of CRR Study 2 ("Study") is to determine the quantity of CRRs that can be allocated to LSEs and the extent to which these CRRs may hedge congestion charges that may be incurred by LSEs based on certain assumptions agreed to by all parties. These results will help guide both the CAISO and the Market Participants in further development of CRR allocation rules. Thus, Market Participants must understand that additional market rules or restrictions may eventually apply in the final approved allocation process. .

Although this Study is not expected to be “100 percent accurate”, it is important to use the best available information for the Study. To this end, this Addendum contains revisions and updates to the July 2004 document that have resulted from discussions with Stakeholders. These changes include the following:

1. Historical Load Data Template Clarifications;
2. Use of Existing Zone Generation Trading Hubs;
4. CAISO responsibility for modeling of Existing Contracts;
5. Development of Load Distribution Factors;
6. Development of Operating Constraints;
7. Modeling of Transmission Ownership Rights;
8. Modeling of the COTP, WAPA, TID and MID transmission; and
9. Modeling of Station Power Service.

2 CRR Data Submitted is Non-Binding

The CAISO wishes to emphasize that all data submitted by the Market Participants for purposes of the Study are non-binding and establishes no precedent for the manner in which CRRs may ultimately be implemented under MRTU.

3 Historical Load Data 2003 Template Clarifications

On August 12, 2004, as a follow-up to the CAISO's release of the data template for CRR Study 2, the CAISO provided additional clarification via e-mail on the data requirements for CRR Study 2. Following is the additional information provided in that e-mail.

3.1 LSE Load Located in more than one Service Territory

The data requested by the CAISO for column C of the "Historical Load Data 2003" spreadsheet titled "Historical Load within a Standard Load Agg Point (MW)" is the load located in each of the former Investor Owned Utilities (IOU) (PG&E, SCE and SDG&E) control area boundaries, with the exception of the load that has been labeled outside of the CAISO control area due to recent changes in the control area boundary. For example, in the case where an LSE has load in both the service territories of SCE and PG&E, the LSE was asked to submit two separate templates, one for the load in PG&E and one for the load in SCE.

3.2 Submission of Load Data by Each Party

In order to avoid the possibility of double counting of load, the CAISO requested that only one party submit load data on behalf of an LSE, where that load data was used in the spreadsheet to calculate the Upper Bound for the CRR nominations. Note that there are two types of CRRs for which CRR requests can be made -- Converted Rights and LSE. The Upper Bound for requests for each type depends on the load metric for the load and the amount of the different types of transmission capacities serving that load. Thus, for a given load, different CRR types may be requested to cover this load and different entities may be making these requests. (The examples below clarify the submittal requirements).

Due to the recent change in the treatment of ETC (see Section 6 below), there is no need for either PTOs or a Munis' Scheduling Coordinator to request CRRs for their ETCs. Thus, the data submitted under the CETC column of the load data template will only be used to determine the upper bound for Converted Rights and LSE CRR types.

Example 1 – Assume there is a Muni (or any LSE that is an ETC rights holder) with a Load of 100 MW, with 60 MW of its load being directly served over ETC capacity and the rest of its Load served over non-ETC and non-TOR capacity (i.e., 40 MW of NFU). Assume the Muni (or another SC) schedules the 40 MW of NFU (excludes the portion of the muni load under ETC) with the CAISO. In this case, the Muni should submit a data template reflecting all of their historical load, i.e., the load served by ETC capacity and the load served by NFU capacity. . The PTO associated with the Muni should NOT submit any historical load data for the Muni, even if it is responsible to schedule the Muni's load that is served under the Muni's ETCs.

In this case, the Muni's data template will be used to determine the Upper Bound for the LSE type CRRs. Once this Upper Bound is known, the Muni should submit a CRR request for the LSE portion of the load.

Example 2 - All load served by NFU.

In this case, the LSE would submit all of their load data to the CAISO, along with a CRR request up to the Upper Bound.

Example 3 - All Muni load served by ETC

In the case where all of the Muni load is served under an ETC and the corresponding PTO schedules this load with the CAISO, the CAISO would prefer that the PTO be the entity that submits historical load data to the CAISO. In this case, the Muni does not need to do anything.

3.3 Exchange Agreements

The CAISO plans to model exchange agreements¹ as part of CRR Study 2. Since the beginning of CRR Study 2 data collection in August 2004, the CAISO has requested each participant to submit an explanation of any exchange agreements they may have. Additionally, the CAISO has requested that exchange agreement data not be submitted on the load data template, but provided separately to the CAISO via e-mail.

4 Use of Existing Zone Gen Hubs

During the Summer and Fall of 2004, the CAISO engaged Market Participants on the definition of trading hubs for use in the integrated forward market ("IFM"). The outcome of this process was to define trading hubs based on generation resources within existing internal congestion zones (NP15, ZP26 and SP15)¹. These trading hubs, known as Existing Zone or EZ-Gen Hubs, will be used in financial inter-SC trades in the forward markets. In CRR Study 2, scenarios 4, 5 and 6 allow Market Participants to use these trading hubs as a source for their requested CRRs. Scenarios 1, 2 and 3 do not allow EZ-Gen Hubs to be used as a source. Actual supply sources are required. To be consistent with the IFM, the Study will use these same type of trading hubs. Consequently, there will be three generation based trading hubs-- one each for NP15, ZP26 and SP15. Each trading hub will be comprised of all generators within that zone. The allocation factors for each trading hub will be based on the Pmax of each generator within each trading hub. The CAISO will derive these trading hubs and provide the definitions to the CRR stakeholders at a later time. For the purpose of submitting CRR allocation requests for the EZ-Gen Hubs, the following names should be used.

- NP EZ Gen Trading Hub
- SP EZ Gen Trading Hub
- ZP EZ Gen Trading Hub

¹ An exchange agreement is an agreement between two parties, where the first party will provide power to the second party during certain times in exchange for a return of power (i.e., from the second party returned back the first party) at other specified times. Thus, there are contractual commitments on both parties to supply/return energy.

¹ See white paper <http://www.aiso.com/docs/2004/10/26/2004102613503922926.pdf>

5 CAISO Responsibility for Modeling ETCs

In May 2004, the CAISO engaged Market Participants in discussions concerning the treatment of ETCs under MRTU. In December 2004, the CAISO filed its new proposal for scheduling and settling of ETCs with FERC, which the Commission recently accepted. Under this new proposal, the CAISO will not reserve unscheduled ETC capacity in the forward markets for Existing Contracts, except at the inter-ties where full ETC capacity will be reserved. When energy is scheduled under ETCs, these schedules will be subject to congestion costs but the CAISO will reverse these charges². As a result of this reversal of congestion charges, ETC holders do not need to hold CRRs as a hedge against congestion charges.

For purposes of CRR Study 2, the original intention was for the CAISO to allocate CRRs to the appropriate PTO or ETC holder's SC. These CRRs were to serve as a hedge against congestion charges incurred by entities scheduling energy under these ETCs in the Day-Ahead Market. Now, as a result of the CAISO's new ETC proposal³, the CAISO and not the ETC holders will assume the responsibility for requesting CRR allocations for the Existing Contract rights. These allocations, which will be held by the CAISO, will be requested in a way intended to prevent other CRR stakeholders from utilizing the ETC capacity when securing CRRs. By protecting this capacity, the CAISO can avoid possible shortfalls in the CAISO balancing account that could arise if others were to utilize ETC capacity and receive congestion payments for this capacity (i.e., avoid revenue inadequacy).

6 Development of Load Distribution Factors

As indicated in the July 2004 document, the CRR Team was considering WECC base cases to develop load distribution factors (LDFs) for use in the definitions of the standard load aggregation points for non-summer seasons as well as on-peak and off-peak periods. However, upon reviewing available WECC base cases, the CRR Team has determined there is a lack of relevant base cases to cover the non-summer seasons and the two time-of-use periods for the study year of 2006. Specifically, the CRR Team has determined, after extensive discussions with the CAISO Grid Planning Department staff, the following.

- For the SCE and SDG&E service territories, these PTOs use a simple scaling of all individual bus loads in the respective areas using the same scaling factor in order to develop the different seasonal and time-of-use (TOU) load values at individual Full Network Model load buses for the WECC base cases. For example, starting with a summer peak case, the loads for a winter off-peak case will be derived by scaling all individual bus loads by the same factor. Thus, even if base cases were available on the

² Note that the full reversal of congestion charges for a schedule will only apply when the schedule is consistent with the terms of the ETC (same sources, same sinks and within MW values). For schedules that do not comply fully the terms in the ETC, only the part of the schedule that does comply with the ETC will receive an associated reversal of congestion charges. At some point in the near future, the CAISO will provide further information on how this reversal of congestion charges will work.

³ See white paper <http://www.aiso.com/docs/2004/09/20/2004092017132615416.pdf>

WECC website for all seasons and on-peak and off-peak for the year of 2006, the LDFs for the load in SCE would not vary by season or TOU period.

- A more involved methodology has been derived by the PG&E staff to develop seasonal load forecasts for on-peak and off-peak periods within the PG&E service territory. This methodology is being used by PG&E for setting loads in its development of WECC cases.

Taking the above information into consideration, the CAISO proposes, for purposes of CRR Study 2, to use eight sets of LDFs for the standard load aggregation points. Each set will correspond to a season and TOU period. The TOU periods are on-peak and off-peak and the seasons will be defined as:

- Spring: March – May
- Summer: June – September
- Autumn: October – November
- Winter: December - February

Since the LDFs for the development of WECC base cases do not change for SCE and SDG&E over the seasons and TOU periods, for the purpose of CRR Study 2, the LDFs for the SCE and SDG&E area will be based on the load from the base case used in the 2004 CAISO Controlled Grid Planning Study (the base case representing the year 2006). The LDFs for the PG&E area will be based on the individual bus load values as determined by using the PG&E methodology.

7 Development of Operating Constraints

As mentioned in the July 2004 document, the CAISO will continue to investigate the use of additional constraints, such as nomograms and contingency analysis, in the simultaneous feasibility test (SFT). The CAISO is planning to distribute a discussion paper in the future that explains the methodology for calculating the various constraints used in the market runs for the Study.

8 Modeling of Transmission Ownership Rights

As described in the July 2004 document, the CAISO will continue to investigate the proper modeling of Transmission Ownership Rights (TOR). Since this capacity is not subject to forward market congestion charges, it will be removed from the network by the CAISO for the Study. This will be accomplished by applying Point-to-Point CRR Options to the network at the appropriate locations (CRR options provide no counter-flow and thus block the capacity). The CAISO is planning to distribute a discussion paper in the future which will describe in more detail the CAISO approach in modeling these rights.

9 Modeling of COTP, WAPA, TID and MID

Western Area Power Administration - Sierra Nevada Region ("WAPA") has become a sub-control area within the SMUD Control Area. In the July 2004 document, it was assumed that WAPA would remain in the CAISO Control Area and a sensitivity study was planned to study the case where WAPA was out of the CAISO Control Area. Now, the CRR Study 2 will include WAPA within the SMUD control area.

Although the Turlock Irrigation District (TID) and the Modesto Irrigation District (MID) currently lie within the CAISO Control Area, it will be assumed, for the purpose of CRR Study 2, that the CAISO control area boundary will be changed so that both the service territories of TID and MID will be located outside of the CAISO control area boundary. Additionally, it will be assumed for CRR Study 2 that the California-Oregon Transmission Project (COTP) will be located outside of the CAISO control area boundary.

The CAISO is preparing a discussion paper for release to market participants in the near future. This discussion paper will provide more detailed modeling assumptions associated with COTP, TID and MID transmission facilities and scheduling points.

10 Station Power Service

The CAISO has recently released a set of principles⁴ that will be used in the development of tariff language for determining the terms and conditions surrounding station power service. The Study will not consider any potential forward market settlement changes that may come out of the station power service process. The current assumption is that the procurement and settlement of this load is the responsibility of a Load Serving Entity and currently in the 2006 summer peak case associated with the 2004 CAISO Controlled Grid Planning Study, this load is explicitly modeled (i.e., load modeled independent of the output of the generator). These loads will be part of each LDF set used in the definition of the three load aggregation points.

⁴ See white paper <http://www.caiso.com/docs/09003a6080/34/75/09003a60803475f0.pdf>