# CRR Study 2: Discussion of Allocation Rules and Market Participant Comments/Questions

March 22, 2004

CRR Study 2 Discussion Meeting

# Purpose of Meeting

- Provide Market Participants with revised CRR Study 2 timeline
- Begin discussion of CRR allocation rules
- Discuss CRR Study 2 comments and questions
- Develop a list of parameters and assumptions for CRR Study 2
  - Provide the CAISO direction in developing a set of study scenarios

# Agenda

- 9:00 am to 9:30 am
  - Opening remarks
  - Objectives of this meeting
  - Discussion of CRR Study 2 timeline
- 9:30 am to 11:30 am
  - Discussion of white paper: "Development of Allocation Rules for Congestion Revenue Rights (CRRs) - Initial Draft for Discussion"
  - Status of CAISO work on Bilateral Contracts and Existing Transmission Contracts
- 11:30 am to 12:30 pm
  - Lunch (not provided)
- 12:30 pm to 3:00 pm
  - Discussion of CRR Study 2 comments/questions submitted by Market Participants
- 3:00 pm to 4:00 pm
  - Discussion of CRR Study 2 parameters for development of study scenarios

# Revised CRR Study 2 Timeline

**Past**

- Released Study 2 assumptions doc on 2/3/04
- Bi-weekly conference calls 2/13 - 3/12 (2004)
- CRR educational classes on 2/17-19 and 3/16-18 (2004)
- Received Initial Study 2 Comments on 3/1/04
- Released draft NSR and CRR allocation rules discussion papers on 3/18/04

**On-going Future Activities**

- 1st CRR Study 2 assumptions / allocations rules discussion at ISO on 3/22/04
- Follow-up CRR discussions in late March and in April, 2004
- Final CRR educational classes on May 4, 5 and 6, 2004 (tentative)
- Final discussion of CRR Study 2 document at ISO (week of May 10, 2004)
- Release revised CRR Study 2 assumptions doc (week of May 17, 2004)
- Final comments on revised CRR Study 2 doc (week of May 24, 2004)
- Release final CRR Study 2 assumptions / allocation doc (early June 2004)
- Begin CRR Study 2 (mid June 2004)
- Complete CRR Study 2 in December 2004 (tentative)

# Allocation Rules Discussion

# CRR Study 2 Comments Discussion

# Participants Who Provided Comments

1. City of Roseville (Roseville)
2. California Department of Water Resources (CDWR)
3. Transmission Agency of Northern California (TANC)
4. Southern California Edison (SCE)
5. Bay Area Municipal Transmission Group (BAMx)
6. Silicon Valley Power (SVP)
7. Metropolitan Water District (MWD)
8. Scott Harvey & William Hogan (H&H – Commissioned by Sempra, Constellation, Coral and Mirant)
9. Florida Power and Light (FPL)

# Subjects of Comments on CRR Study 2 Doc

- Objectives of CRR Study 2
- Study Period
- Terms of CRRs to Study
- Full Network Model (FNM)
- Outages in the Full Network Model
- Operating Constraints
- Standard Load Aggregation Points
- Load Distribution Factors
- CRR Types (CRR Structure)
- CRR Nominations
- ETCs
- Converted Rights
- LSEs

# Subjects of Study 2 Comments Cont……

- Metered Sub-systems (MSS)
- Merchant Transmission
- Non-ISO Transmission
- Optimization and Simultaneous Feasibility Test (SFT)
- CRR Allocation Objective Function
- Break down of Large Aggregation Points for Allocation Purposes
- LMP Calculations
- Developing Transaction Data
- Determining Yearly Financial Hedge Positions
- Upper Bound Calculation
- Settlements
- Other Concerns

# Objectives of CRR Study 2

- Proposal
  - Estimate the quantities of CRRs (MW) that can be released
  - Compare CRR revenue based on estimated quantities of released CRRs (MW) to estimated congestion costs for purposes of determining hedging positions
    - Calculate a yearly set of hourly LMPs along with Day-ahead transaction data to determine CRR revenue and congestion costs
- Concerns
  - Develop an equitable methodology for allocating CRRs (SCE)
  - CAISO needs to acknowledge weaknesses of Study 2 approach and assumptions (TANC)
  - The goal of the CRR allocation should not be interpreted as ensuring access to low cost generation (H&H)

# Study Period

- Proposal
  - The year of 2005
  - Determination of study period should be based on when MD02 (LMP and CRR) will be implemented
- Concerns
  - Should the year 2006 be used as the study period (CAISO)

# Terms of CRRs to Study

- Proposal
  - Terms to Study
    - Annual term
    - Monthly term
      - All 12 months
  - Time-of-use (TOU) periods
    - On-peak
    - Off-peaks
- Concerns
  - Create more TOU periods to handle different periods where congestion may occur (CDWR)

# Full Network Model

- Proposal
  - Use a DC model for Allocation/Auction of CRRs
  - Use an open-loop system to be consistent with the model used in the Integrated Forward Market (IFM)
- Concerns
  - Use an AC model for Allocation/Auction of CRRs since an AC model is used in Forward-Markets (Roseville)
  - CAISO should perform a sensitivity study for a closed looped system (TANC)

# Outages in the Network Model

- Proposal
  - Do not model network outages in the monthly Allocations
- Concerns
  - This may distort the amount of CRRs that can be allocated (BAMx)

# Operating Constraints

- Proposal
  - Use the same information from CRR Study 1
  - In addition, investigate the use of other types of constraints
- Concerns
  - Need to work with Market Participants, e.g., develop white paper (SCE)
  - Provide transparency to Market Participants on the constraints being modeled (TANC)
  - Constraint scaling (for reactive power and losses) is a fudge factor (SVP)

# Standard Load Aggregation Points

- Proposal
  - 3 Standard Load Aggregation Points (SLAP)
  - Load not scheduled or sinked (CRR) at SLAP will receive locational prices in Forward-Market
    - ETC
    - Demand response
    - Pump/gen
- Concerns
  - The larger the aggregation points, the larger the differences between Day-ahead and Hour-ahead schedules and prices and Real-time flows and prices (H&H)
  - Unclear about what load (or load types) will be priced at the nodal level (CDWR)

# Load Distribution Factors

- Proposal
  - Use LDFs from network model (originating base case used in the study) for annual allocation
    - For example, Summer 2005 planning model
  - Monthly allocations
    - No proposal
- Concerns
  - Unclear if the monthly LDFs should be different from the annual LDFs (Roseville)
  - Different LDF sets in the IFM may give rise to hourly congestion rent surpluses or shortages between IFMs and Real-time (H&H)

# CRR Types (CRR Structure)

- Proposal
  - Referred to as "CRR structure" in the CRR Educational Material
  - Point-to-Point
  - Network Service Right (NSR)
    - Recently distributed NSR white paper
- Concerns
  - NSR may be interpreted as a different CRR product (SCE)

# CRR Nominations

- Proposal
  - Market Participants submit CRR nominations
  - Requests will be validated against Source and Sink locations, Source MW and total Sink MW
- Concerns
  - Market Participants should not be forced to request CRR Obligations that are liabilities (CDWR)
  - CAISO needs to perform historical analysis to determine which CRR Obligations may be liabilities (MWD)

# ETCs: Proposal

- Proposal
  - ETC sinked at ETC location and not at SLAP
  - ETC modeled as Obligations
  - Upper bound based on peak load and contractual rights
  - PTO to provide ETC related CRR nominations to the CAISO

# ETCs: Concerns

- Concerns
  - ETC should schedule (Forward Markets) and sink (CRR Allocation) at SLAP and should receive SLAP price (SVP and TANC)
  - CAISO should run a sensitivity with ETCs scheduled and sinked at nodal level (assuming previous bullet) (SVP)
  - PTO should work with ETC holders in determining ETC related CRR nominations (TANC)
  - ETC should submit ETC related CRR nominations and not the PTO (MWD)
  - CAISO should complete analysis for handling ETCs in the Day-ahead, Hour-ahead and Real-time markets before making any assumptions about ETCs for CRR Study 2 (SCE)

# Converted Rights

- Proposal
  - Converted Rights CRR nominations sinked at the SLAP
  - Converted Rights CRRs modeled as Options
  - Upper bound based on peak load and contractual rights
- Concerns
  - Converted Rights should not receive Options but rather Obligations (SCE)
  - Converted Rights should be treated the same as LSEs (SCE)

# LSEs: Proposal

- Proposal
  - LSE CRR nominations sinked at the SLAP
  - LSE CRRs modeled as Obligations
  - Upper bound based on peak load
  - CAISO will attempt to determine (estimate) actual Source locations for CRRs that submit a Source as a Trading Hub

# LSEs: Concerns

- Concerns
  - CAISO should work with Market Participants in determining the Source locations for CRRs that have a Source as a Trading Hub (TANC)
  - Do not attempt to model Source locations and leave Sources at the Trading Hub (SCE)
  - Determining Source location could be difficult (SVP)
  - Unclear how the Source(s) from a bilateral contract will be determined for use in the CRR Allocation (Roseville)

# Metered Sub-systems

- Proposal
  - CAISO presented four pricing options for the Forward Markets along with corresponding CRR nomination rules
  - Assuming Option B for CRR Study 2
  - CAISO now thinks that MSS should sink (for CRR Allocation) at SLAP for Option B instead of MSS location
- Concerns
  - CRR Study 2 should use pricing Option A (SVP and BAMx)
  - Do not use a MSS aggregation Point, but sink at SLAP (SVP and BAMx))
  - Need to model all pricing options in sensitivity runs (TANC)
  - Need to work with MSS to determine internal generation levels for use in requesting CRRs based on net load (Roseville)
  - Pricing Option A and Option B may give rise to inefficient arbitrage incentives (H&H)

# Merchant Transmission

- Proposal
  - Allocate CRRs to Merchant Transmission
  - Model Merchant Transmission (if any) as part of CRR Study 2
  - Develop white paper on handling of CRR allocations to Merchant Transmission
- Concerns
  - No set process for allocating CRRs to Merchant Transmission (FPL)
  - Merchant Transmission should receive Options (FPL)
  - CRRs allocated to Merchant Transmission should be determined prior to transmission operation (FPL)
  - CAISO needs to first identify all Merchant Transmission that it would model in CRR Study 2 before it starts the study (SCE)

# Non-ISO Transmission (Transmission Ownership Rights)

- Proposal
  - Remove Non-ISO transmission capacity from network model by reducing OTC
  - Identify in advance other Non-ISO transmission issues
- Concerns
  - There were no noted concerns

# Optimization and Simultaneous Feasibility Test (SFT)

- Proposal
  - Different from CRR Study 1
  - For a given amount of defined available transmission capacity (e.g., 75% of defined OTCs) use one Optimization/SFT process
  - Different CRR types (e.g., ETC, Converted Rights and LSEs) will be modeled with priorities to ensure proposed priority to transmission capacity
- Concerns
  - Market Participants do not have enough information on this topic to fully make comments (MWD)

# CRR Allocation Objective Function

- Proposal
  - Maximize CRR MW allocation taking into account CRR priorities and effectiveness of CRRs in alleviating constraints
- Concerns
  - Objective function should include a minimization of the potential financial hit to entities (CDWR)
  - Objective function should consider a priority assigned by requestor, the MW size of request and the associated shift factors (SCE)
  - In case of CRR reduction, pro-rate request based on submitted priorities, MW requested and shift factor (SCE)
  - Objective function should maximize CRRs to individual LSEs to ensure proportionate share (TANC)

# Break Down of Large Aggregation Points for Allocation Purposes

- Proposal
  - Break down to CRR nominations that sink at SLAP to smaller aggregations to increase allocation efficiency
- Concerns
  - How to determine the smaller aggregations (CAISO)
  - Should there be no re-aggregation and simply price the smaller aggregation levels for CRR revenue (CAISO)
  - The dis-aggregation was not proportional over the SLAPs (H&H)
  - The re-aggregation may result in overselling transmission capacity based on the SFT test (H&H)

# LMP Calculations

- Proposal
  - Calculate hourly LMPs over a year based on same assumptions as used in LMP Study 3
  - Use these LMPs for calculation of estimated congestion costs
- Concerns
  - Focus on CRR Allocation process and not divert human resources (SCE)

# Developing Transaction Data

- Proposal
  - Develop transaction data to be used with calculated LMPs to estimate congestion costs for each hour over a period of a year
- Concerns
  - No way to know or estimate which Sources to use in bilateral contracts (BAMx)
  - Will only provide and indication of actual schedules and prices (TANC)

# Determining Yearly Financial Hedge Positions

- Proposal
  - Estimate congestion costs based on calculated LMPs and transaction data
  - Estimate CRR revenue (using calculated LMPs)
  - Compare congestion cost to CRR revenue to determine initial financial hedge positions
  - Scale down CRRs that are associated with excess CRR revenue and re-run Optimization/SFT
  - Repeat process if necessary
- Concerns
  - Unclear how the scaling process will work (SVP)
  - Include modified CRR paths (Source/Sink locations) to determine re-allocation of CRRs (TANC)
  - This method should not be treated as a preferred method (TANC)

# Upper Bound Calculation

- Proposal
  - Upper bound based on peak load (historical and forecast)
  - For ETC and Converted Rights, base upper bound on minimum of peak load and contractual rights
- Concerns
  - Use 75% of peak load for annual upper bound and 25% of peak load for monthly upper bound (SCE)
  - This method does not provide consideration of loads served that vary seasonally or on-peak and off-peak (CDWR)
  - ETC related CRR nomination upper bound should be based on contractual rights (TANC)

# Settlements

- Proposal
  - Use either final Forward Market allocation factors or allocation factors from the CRR Allocation/Auction process for determining CRR Revenue prices
- Concerns
  - Implement a “Use it or lose it” policy for settling CRR revenue (CDWR)

# Other Concerns

- Use CRR Options for all CRR nominations (MWD)
- Perform a retrospective analysis as a check point (MWD)
- Determine policy issues before moving forward with CRR Study 2 (SCE)
- Use CRR Study 2 as a learning tool and do not lock in CRR allocations based on results of CRR Study 2 (SCE)
- Use an Auction Revenue Rights (ARR) process instead of allocating CRR MWs in order to minimize administration overhead of load switching and to produce a true value of the CRR (H&H)

# Parameters and Assumptions List
# For
# CRR Study 2