California Independent
System Operator Corporation

Memorandum

To: ISO Board of Governors

From: Charles King, Vice President, Market Development and Program Management

Shucheng Liu, Principal Market Developer

Phil Leiber, Treasurer and Director of Financial Planning

Sidney Davies, Assistant General Counsel -Tariff and Compliance

Date: May 21, 2007

Re: ***Decision on Proposed Congestion Revenue Rights Credit Policy***

This memorandum requires Board action

INTRODUCTION

Congestion Revenue Rights (CRR) is a central component of the CAISO MRTU project. It is a financial instrument designed to hedge transmission congestion charges under the locational marginal pricing (LMP) system. Like a Firm Transmission Right (FTR) in today's market, a CRR entitles its holder to receive a payment from the CAISO if the congestion in a given trading hour is in the same direction as the CRR. Unlike today's FTRs, however, a CRR requires the holder to pay a charge to the CAISO if the congestion in a given trading hour is in the opposite direction of the CRR. In case a CRR holder is unable or unwilling to make the required payment (default or bankruptcy) the uncovered financial loss will be shared by other market participants, potentially for the entire term of the CRR. In order to minimize the occurrence and the impact of such situations, credit policies governing the financial requirements for obtaining and holding CRRs need to be established and enforced.

The objective of the CRR credit policy is to protect the financial interests of all market participants by reducing the likelihood of default and mitigating the losses to other market participants if a default happens. At the same time, the policy should not be overly conservative so as to create an inefficient barrier to entering the CRR market for creditworthy market participants. A policy imbalance in either direction will discourage the participation of market participants and eventually reduce the liquidity and effectiveness of the CRR market.

The initial CRR allocation will take place in June, with the first auction following in October 2007. Accordingly, it is necessary for the CRR credit policy to be filed with FERC in June to allow for the effectiveness of these provisions by those dates.

The framework for the credit policy already exists. Under the currently effective ISO Tariff, market participants must have sufficient Aggregate Credit to cover their Estimated Aggregate Liabilities. The MRTU Tariff filed in February 2006 requires CRR holders to have Aggregate Credit to cover the net projected value of their CRRs for the term of the CRR instruments. Over the past several months, the CAISO has been working with stakeholders to flesh out the specific details concerning credit policies applicable to CRRs. The details discussed in the memorandum strike a balance between the goal of mitigating the effect of defaults affecting creditors due to potential payment defaults by CRR holders while allowing creditworthy entities to hold CRR without onerous credit requirements. The CAISO gained valuable insight from the practices of peer ISOs and feedback from stakeholders and these insights have shaped Management's recommendation.

KEY ELEMENTS OF THE CAISO CRR CREDIT POLICY

1. CRR Credit Requirement Generally

There are two ways to obtain CRRs from the CAISO. One is through the CRR allocation process and the other is through the CRR auction. All CRR holders—regardless of whether the CRRs are allocated or purchased in the auction-- will be subject to the CAISO's credit policies for holding the CRRs. In addition, market participants will be subject to credit requirements to participate in any CRR auction.

The CRR allocation is open to Load-Serving Entities (LSEs) only, to enable them to better manage the exposure of their end-use customers to transmission congestion charges in the MRTU markets. For CRRs obtained through the allocation process the LSEs do not make any payment to the CAISO nor are paid by the CAISO to hold these CRRs. Once the CRR allocation process is complete, however, LSEs will have to have sufficient Available Credit[1] to assume the ownership of allocated CRRs.

On the other hand, all market participants can participate in CRR auction by submitting bids to purchase positively or negatively valued CRRs. Just like any other market, there are potential opportunities for speculation and gaming that could have adverse impacts on other parties if market rules and credit requirements are not properly designed. Absent credit requirements for participation in the CRR auction, a participant could potentially submit bids to purchase positively priced CRRs that would be beyond its financial capability to pay for, and then fail to pay the purchase price for CRRs won in the auction. Alternatively, a participant could bid for negatively priced CRRs, take the payments by the CAISO and then default on subsequent payment obligations to the CAISO to the detriment of market creditors in the months of the defaults. To limit the likelihood of this occurring, the CAISO proposes the following credit policies.

2. Auction Credit Requirements

The CAISO proposes to require a $500,000 minimum Available Credit amount to participate in the auction. Available Credit must also exceed the absolute value of all bids for either positively priced or negatively priced CRRs. Otherwise, all the bids made by the participant will be rejected.

After the conclusion of the auction, and subject to the credit requirements applicable to CRR holders (discussed subsequently), winners will pay the full amounts (sum of auction market clearing price times MW quantities awarded) to the CAISO for positively priced CRRs awarded, and CAISO will pay the full amounts to market participants awarded for negatively priced CRRs.

3. Credit Requirement to Hold Short-Term CRRs

[1] Available Credit is defined as the Aggregate Credit Limit (which consists of Unsecured Credit Limit and/or Collateral) less their Estimated Aggregate Liability (the value of unpaid obligations to CAISO).

Due to many unpredictable factors, such as load, generation resource availability, transmission outage, etc, the power flow on the transmission grid as well as congestion pattern changes constantly. LMPs are potentially very volatile

By definition, congestion revenue of a CRR is the difference between the congestion components of the LMP at sink and the LMP at the source times the megawatt quantity of the CRR, based on the LMPs of the Day Ahead Integrated Forward Market. The congestion revenue of a CRR can vary from one hour to the next and could also swing from positive to negative from hour to hour. Thus the congestion revenue of a CRR over its specified term is a stochastic variable. These properties of CRRs apply irrespective of whether the CRR is short-term or long-term in nature. Consequently, the credit requirement for holding a CRR must be designed to reasonably cover the potential actual congestion revenues in the event that actual congestion revenues differ from those expected at the time of the auction.

The CAISO therefore proposes a method to determine the credit requirement for holding a Short-Term CRR (ST-CRR, with a term of one year or less). It is similar to the Value-at-Risk (VaR) method that is widely used in risk management. Specifically, the credit requirement for holding a ST-CRR is the negative of the auction price plus a credit margin of the ST-CRR.

The auction price component of the credit requirement reflects the expected value of ST-CRR, i.e., the expected value of payments to the holder in the case of a positively priced ST-CRR and the expected value of payments by the holder to the CAISO in the case of a negatively priced ST-CRR. The credit margin is calculated as the difference between the expected value and 5th percentile value from the probability distribution of congestion revenue of the ST-CRR. The combination of the auction price component and the credit margin is designed such that in case of default by the holder, the likelihood that the credit requirement will not fully cover the payments due from the ST-CRR holder is five percent or less. Accordingly, entities will be required to maintain Available Credit to support these prospective obligations.

With respect to deterging the credit margin, for the first year of the CAISO MRTU operation, there will be no historical LMP data available. The prices simulated in CAISO LMP studies will therefore be used initially to calculate credit margins for all ST-CRRs. In the future, actual LMP data will be used to revise the required credit margins.

If a holder owns more than one CRR, the overall credit requirement is assessed for the whole portfolio of CRRs of this holder. The excess credits from CRRs with high positive auction prices can offset up to the same amount of the credit requirements for other CRRs in the same portfolio. However, the excess credits of a CRR portfolio will not offset any other component of the participant's Estimated Aggregate Liability, as it would be inappropriate to permit speculative future cash flows to offset credit requirements necessary to support payment obligations for transactions that have already occurred, and for which financial clearing must take place prior to the availability of such future CRR payment streams.

An Out of Control Area Load Serving Entity (OCALSE) who is allocated ST-CRRs will be subject to the same credit requirements for holding ST-CRRs as other market participants. Additionally, OCALSE will be required to maintain one period of credit coverage for their Wheeling Access Charge (WAC) prepayment beyond the current period. Per the FERC April 20, 2007 Rehearing Order OCALSEs will be required to prepay the WAC on a monthly basis in advance of the trade month.

4. Credit Requirement to Hold Long-Term CRRs

All requirements for holding ST-CRRs apply to Long-Term CRR (LT-CRR, CRRs with terms longer than 1 year). In case of a default involving a LT-CRR, the CAISO may choose to resell it in the subsequent monthly auctions, but it may not be possible for a LT-CRR to be fully liquidated at the auction. If the LT-CRR is not resold in an auction, the financial loss includes not only the current period congestion revenue payments of the defaulting LT-CRR holder, but also the congestion revenue payments due for all the years in the remaining term of the defaulted LT-CRR. Therefore the one period credit requirement for holding a ST-CRR does not provide all necessary coverage for holding a LT-CRR. Instead, the credit requirement for holding a LT-CRR must cover financial risk over the whole term of the LT-CRR.

Accordingly, the CAISO must value the long-term CRRs in a manner that reasonably reflects the payment obligations over the term of the CRR. CAISO proposes the following method for such valuation and to determine the credit requirement for holding a LT-CRR:

- The credit requirement for holding a LT-CRR is the negative of the one-year CRR auction price times the number of years remaining in the term of the LT-CRR plus the one-year CRR credit margin times the square root of the number of remaining years of the LT-CRR term.

The credit requirements for holding LT-CRRs will be adjusted not less than annually. The adjustment will account for the change of remaining terms of the LT-CRRs and the new auction prices of ST-CRRs. The credit margins will also be updated no less than annually based on the actual LMP data from the market operation of the past year.

5. COMPLIANCE MEASURES

To help ensure that CRR holders maintain sufficient Available Credit to cover the credit risk of their CRR portfolios, the CAISO will reassess the value of CRRs on a monthly basis using the latest monthly auction prices. In addition, the CAISO will recalculate the credit margin periodically based on actual LMP data. Credit requirements for both the current owner and prospective new owner will be evaluated and adjusted if necessary when the ownership of a CRR is to be transferred through either secondary market trading or through load migration.

All CAISO market participants, including CRR holders are required to comply with the CAISO credit requirements as set forth in Section 12 of the Tariff, including meeting CAISO calls for additional Financial Security to cover CRR and other market obligations. CRR holders that do not comply with the CAISO credit requirements or otherwise default on payments will also be subject to the following, as appropriate:

- Retain Financial Security sufficient to cover the value of all of the market participant's liabilities including the future value of their CRR obligations
- Retain all payments related to the CRRs (or other market related payments otherwise due the market participant) and resell the CRRs in subsequent auctions
- Terminate all CRR agreements with the default holder
- Exclude the holder from eligibility to participate in the allocation or auction until all defaults have been cured and require the holder to post an additional Financial Security Amount in lieu of an Unsecured Credit Limit for future participation, and
- Resell the CRR, including Long-Term CRRs (either the remaining term or through the monthly or seasonal auctions).

6. MARKET MONITORING

The credit policies described above represent the primary mechanism by which the CAISO may deter potential detrimental behavior by market participants. Other steps to deter detrimental behavior that can be taken by the CAISO Department of Market Monitoring (DMM) include:

- Requiring that auction participants disclosure affiliations with any other entities bidding in the auction.
- Providing a warning to participants that CAISO and FERC market rules prohibit provision of false information to the CAISO, or manipulative trading practices involving fraudulent or collusive behavior.
- Referring any behavior that may appear – based on information available to DMM - to potentially violate any CAISO or FERC market rules prohibiting false information or market manipulation to FERC.

STAKEHOLDER PROCESS

The following dates and milestones provide an overview of the larger CRR stakeholder process CAISO staff have conducted since mid 2006, as well as an indication of certain key upcoming milestones in this process.

Stakeholder Process:

- Stakeholder Meetings – February 27 and April 3, 2007
- Stakeholder Conference Calls – March 27, May 4 and May 16, 2007
- Stakeholder written comments submitted – March 9, April 6, and May 11, 2007

Key Upcoming Milestones:

- Planned filing on CRR Credit Policy –June 2007

Also attached are the matrix of stakeholder written comments and responses by the CAISO.

DMM OPINION

Members of the CAISO Department of Market Monitoring have participated in the stakeholder process and discussions on these CRR credit policy matters. Their options are reflected in this memorandum.

MANAGEMENT RECOMMENDATION

Management recommends that the Board approve this proposal and authorize Management to file the associated tariff with FERC, and to implement the CRR credit policy as needed to achieve the scheduled startup of the CRR auctions.

<u>Motion</u>

Moved, that the ISO Board of Governors approve the credit policy for Congestion Revenue Rights as outlined in the memorandum dated May 21, 2007; and

That the ISO Board of Governors authorize Management to make all the necessary and appropriate filings with the Federal Energy Regulatory Commission to implement this proposal.