

**FINAL**

**Opinion on Long-Term Congestion Revenue Rights Proposal**

**by**

**Frank A. Wolak, Chairman**

**James Bushnell, Member**

**Benjamin F. Hobbs, Member**

**Market Surveillance Committee of the California ISO**

**January 18, 2007**

**Summary**

**The ISO's Long-Term Congestion Revenue Rights (LT-CRRs) proposal is a reasonable allocation process that poses minimal risks to energy and ancillary services market efficiency. We strongly support the characterization of all CRRs issued by the ISO as firm, fully funded obligations. We believe there are adequate safeguards against revenue shortfalls to fund the CRRs. We note, however, that tying of allocation of LT-CRRs to the already vetted short-term CRR allocation process will greatly raise the financial stakes of the initial short-term allocation. Because California ISO market participants have no actual experience with a locational marginal pricing (LMP) market design, there is uncertainty about what short-term CRR allocations will come out of the initial process. A guarantee of full-funding of annual and long-term CRRs also increases the risk that the ISO will need to assess an uplift charge in the event that its merchandising surplus—the difference between the amount loads pay and amount generation unit owners receive for energy—is insufficient to fund CRR payments in the face of sustained or significant line outages. Because of the higher stakes associated with the LT-CRRs, which will have ten times the potential financial benefits or liabilities of the short-term CRRs, we recommend that the ISO more significantly limit the amount of rights that can be converted to LT-CRRs in the first year. This will provide the ISO with the flexibility in subsequent years to use the allocation of the remaining rights to address any perceived inequities that arise from the initial allocation.**

**1. Introduction**

We have been asked to comment on the ISO's Long-Term Congestion Revenue Rights (LT-CRRs) proposal. At the outset, it is important to emphasize that several constraints were imposed on design of this LT-CRR proposal. First, the ISO already has a short-term CRR allocation mechanism that is part of the Market Redesign and Technology Upgrade (MRTU) filing conditionally approved by the Federal Energy Regulatory Commission (FERC). Second, on July 20, 2006, FERC issued an order requesting that the ISO make a compliance filing with a LT-CRR proposal by January 29, 2007. Finally, in its July 20, 2006 Order, FERC issued seven guidelines for the design of the LT-CRR product. All three of these constraints impacted the ISO's final LT-CRR proposal.

In preparing this opinion, MSC members have discussed these issues with ISO staff at MSC meetings, during phone calls, and in meetings with the design team at the ISO. MSC members have also attended several of the MRTU stakeholder meetings on this topic held over the past four months and given presentations on LT-CRR design at several of these meetings,

## **FINAL**

including the October 18, 2006 Market Issues Forum which was attended by members of ISO Board. We would like to express our gratitude to stakeholders and ISO staff for their very helpful input.

### **2. Goals of LT-CRR Process**

We have identified three sets of goals for the LT-CRR allocation process: (1) satisfy the Federal Energy Regulatory Commission (FERC) guidelines and meet January 29, 2007 compliance filing deadline, (2) address stakeholder business needs with respect to the release of LT-CRRs and the potential inequities in the LT-CRR allocation process, and (3) address ISO concerns about the revenue adequacy of the CRRs that it issues as well as limit the adverse energy market efficiency consequences of the LT-CRR allocation process.

The ISO's existing short-term CRR product is consistent with five of the FERC guidelines for long-term CRRs. These are: (1) CRRs should specify a source, sink and megawatt (MW) quantity, (2) CRRs made available by transmission expansions should go to the parties that pay for the upgrade, (3) load-serving entities (LSEs) should have priority in the allocation process, (4) CRRs should be re-assignable to follow load when it migrates between LSEs, and (5) an auction is not required to allocate the CRRs. The guidelines that the current short-term proposal does not address or appears inconsistent with are: (1) the CRR must provide a long-term hedge that cannot be modified and (2) the duration of the CRR must be sufficient to hedge long-term supply arrangements. The conditionally approved MRTU tariff also does not guarantee full-funding of the short-term CRRs allocated by the ISO. FERC Order 681 states that a firm locational price hedge of at least 10 years in duration meets the second requirement. Although not explicitly stated as requirement, the FERC order also emphasized that sufficient LT-CRRs should be released so that LSEs can hedge their baseload energy needs.

There appears to be considerable stakeholder skepticism that secondary market transactions in both short-term and long-term CRRs would allow them to obtain the locational price hedges they desire. For this reason, many stakeholders argued for a CRR allocation that comes as close as possible to providing the hedging instruments they need to serve their retail load. Stakeholders also expressed a desire for an equitable allocation of CRRs. However, there were many different definitions of equity offered by stakeholders. Some argued for allocations based on which entities historically paid for the bulk transmission network. Others argued for allocations based on which entities would pay for the transmission network in the present and future. Another related equity issue is the treatment of pre-existing and future energy contracting relationships in the allocation process. However, as we note below, there are market efficiency consequences to basing CRR allocations on future energy contracting relationships. These considerations also led several stakeholders to advocate a go-slow approach to the LT-CRR allocation process by releasing a small percentage of the total available CRRs as LT-CRRs.

There are several aspects of the full funding and MW firmness requirements of the LT-CRRs that concern the ISO. The first is the desire to ensure that the CRRs it issues are ex post simultaneously feasible in the sense that the merchandising surplus--the difference between the amount buyers pay and sellers receive for electricity--is sufficient to pay its CRR obligations. The ISO also wants to issue as many CRRs as possible, which puts further pressure on this ex post simultaneous feasibility requirement. An additional concern with simultaneous feasibility specific to long-term CRRs is whether entities issued long-term CRRs have the option to turn

## **FINAL**

them back to the ISO in future years. Giving this ability to market participants can considerably complicate the process of guaranteeing full funding and MW firmness of the LT-CRRs.

The MSC has emphasized on numerous occasions, certain CRR allocations can cause market participant behavior that results in market outcomes with higher levels of congestion and lower levels of grid reliability. An important concern is to ensure that LT-CRRs do not produce this result. Using existing or proposed energy contracts to give priority in the CRR allocation process may cause this to arise. Despite stakeholder skepticism of transactions in the secondary market, it is important that the ISO does not create any artificial barriers to these transactions. These barriers might prevent two LSEs from entering into a mutually beneficial transaction with no adverse market efficiency or system reliability consequences.

An important consideration for stakeholders and the ISO is the existence of the annual and short-term CRR allocation process in the MRTU filing. This allocation process was the result of considerable stakeholder effort and compromise. To the extent possible, the LT-CRR process should therefore build on this process. The short time horizon to file a LT-CRR proposal further increases the need to do this.

### **3. How ISO's Proposal Balances Competing Goals**

Many of the goals described above directly or indirectly conflict with one another. Nevertheless, we believe the ISO's proposal attempts to balance stakeholder desires when these are in conflict without compromising its market efficiency goals or its desire to build on the existing annual and short-term CRR allocation process.

#### **3.1. The proposal does not harm market efficiency and system reliability**

Allocating LT-CRRs ensures that they go to the entities most likely to use them as a passive hedge against congestion charges, rather than as a mechanism to leverage any local market power they might possess, which harms market efficiency. This logic was an important consideration in the decision to allocate annual CRRs. Given the duration of LT-CRRs, any market efficiency problems that result from the CRR allocation will exist for a long time.

Because the LT-CRRs can only be designated from CRRs allocated in Tier 1 and Tier 2 of the annual CRR allocation process, there is no need to verify the existence of a longer-term supply relationships. The only source verifications will be those for the first year of the annual CRR allocation process. This is the only source of priority in the LT-CRR allocation process to market participants with existing or planned long-term energy supply arrangements between the source and sink of the LT-CRR. This issue was very controversial among the stakeholders. It is important to emphasize that the requirement to show pre-existing contracts for the source validation process pertains only to the first year of the annual CRR allocation process, although the impact of this initial allocation can last for 10 years if an annual CRR awarded in Tier 1 or 2 is designated as a LT-CRR. Although the MSC prefers a mechanism that does not allocate LT-CRRs based on pre-existing long-term supply arrangements, MSC members above all oppose allocations based on planned long-term supply arrangements, which is something this proposal avoids.

## **FINAL**

The major concern with giving priority to proposed long-term supply arrangements is that retailers could sign these arrangements far from load centers and then use the allocation process to obtain very lucrative CRR payments. This CRR allocation mechanism will undo the very beneficial locational price signals that inform suppliers not to locate new generation units at low-priced locations that still meet the ISO's deliverability requirements. In addition, the ISO will be faced with the very difficult task of verifying which planned long-term supply arrangements are legitimate and deserving of a LT-CRR and which are not. Allocations based on historical supply arrangements also face these difficulties, but they do not undermine the beneficial locational price signals for new generation investments.

Although we prefer the use of a historic benchmark period to one that is tied to future commercial decisions, several stakeholders have raised concerns about the specific historic period used for the "dry-run" allocation of short-term CRRs. A reasonable case can be made that this period was not representative of either historic or future commercial arrangements. We understand that the ISO is considering changing this reference period to another more representative historic period, and we support such a change.

### **3.2. The proposal limits revenue adequacy risk despite the availability of firm LT-CRRs**

The decision to require LT-CRRs to be multi-year obligations, not a sequence of one-year CRRs with the option to renew for a number of years should make it much easier for the ISO to guarantee MW firmness and full funding. Once allocated, these long-term obligations can only be removed by selling them to another market participant. There are a number of reasons to prefer ten-year obligations to a sequence of 1 year renewals. The first is that the option to renew can create revenue adequacy problems for the ISO if market participants are able to refuse to renew CRRs with negative expected congestion payments. Without these payments from the market participant, the ISO may be unable to fund its other LT-CRR obligations. Consequently, the ISO may be forced to reduce the number CRRs it allows other market participants to renew in response to the renewal decisions of other market participants. This would conflict with the goal of making the LT-CRRs "firm."

The allocation of the LT-CRRs will always be subject to a simultaneous feasibility test (SFT) for the duration of the contracts being allocated. Thus before any 10 year rights are awarded in year 1, for example, their feasibility for years 2-10 will be verified. The SFTs used in Tier LT will use the current configuration of the grid, just like the SFTs for Tiers 1 and 2 that determine the annual CRR awards for that year, except that Tier LT extends the feasibility test throughout the ten-year term. According to the ISO's proposal, the transmission planning process will guarantee that future upgrades maintain the firmness of these LT-CRRs throughout their entire 10-year life. These rights are also eligible for renewal after 10 years, but that subsequent renewal would also be subject to a feasibility test. This should provide a reasonable safeguard against the additional risks of revenue imbalance that arise by making the rights both firm and fully funded. That said, there is no way to completely guarantee revenue balance against all contingencies. Thus the firmness of LT-CRRs will be subject to certain extraordinary events, such as the departure of a participating transmission owner (PTO) from the ISO.

## FINAL

It is important to note that the priority nomination process (PNP) in the annual CRR allocation provides a mechanism through which firms have the option to renew CRRs issued for the previous year. However, these renewals will not be guaranteed, but will rather be subject to a feasibility test. Thus firms for whom optionality of renewal is more important than the “firmness” of the rights will have the ability to pursue that route.

A second reason to prefer the multi-year obligations is that this will increase liquidity in the secondary market for CRRs, or equivalent instruments. Unless LSEs sell the financial obligations associated with their long-term CRRs that have negative expected values in the secondary bilateral market, they will have to make payments to the ISO as part of their LT-CRR obligations, because LT-CRRs issued by the ISO are not transferable. This downside risk of holding LT-CRRs also increases the likelihood that LSEs that are initially allocated LT-CRRs will be active participants in the secondary bilateral CRR market. A final advantage of allocating a 10-year instrument (or other multi-year obligations) instead of a sequence of one-year CRRs with the option to renew each year is that the 10-year instrument will increase the likelihood that market participants will designate sources and sinks for their LT-CRRs along the major transmission interfaces with predictable directions of congestion, rather than sources and sinks that may yield large congestion payments during some years and large congestion obligations in other years. This is consistent with FERC’s goal for market participants to use LT-CRRs for baseload energy supply contracts, because baseload contracts are more likely to use of the major transmission interfaces both into and within California.

Some stakeholders have expressed a desire for LT-CRRs with terms longer than 10 years. Others have expressed a desire for shorter duration LT-CRRs. We believe that both of these preferences can be accommodated within the existing annual PNP and LT-CRR allocation process combined with secondary bilateral trading of portions of both short-term and long-term CRRs. In addition, the incumbent owner has priority for retaining any expiring 10-year or annual CRR subject to a SFT over the relevant time horizon, which implies that this owner could retain the CRR indefinitely.

The ISO’s decision to make the megawatt (MW) quantity firm and to fund fully both long-term and annual CRRs issued by the ISO is likely to improve secondary market performance of annual CRRs. Making the expected congestion payments associated with a 1 MW CRR from a given source and sink equal, regardless of the duration of the CRR, will reduce the transactions cost of selling CRRs, or equivalent derivative instruments, in the secondary market. If some CRRs are fully funded and others are only partially funded, there is likely to be less competition among suppliers to provide both kinds of CRRs in the secondary market.

It is important to recognize that there is a conflict between revenue adequacy and the desire for the ISO to release as many CRRs as possible. The more CRRs released, the greater the risk of revenue inadequacy. The experience of the eastern ISOs, who have often had to reduce payments because allocated rights were often infeasible due to line outages, is informative and cautionary. This is the motivation for the ISO reserving 25% of capacity of the transmission network for the monthly CRR allocation processes. If the ISO wants to reduce the risk of revenue inadequacy, it can hold out an insurance margin by putting say 20% instead of 25 % of the capacity of transmission network into the monthly allocation process. This leaves a 5%

## FINAL

actuarial headroom that absorbs the impacts of unplanned transmission derates and allows the ISO to maintain full funding without uplift charges. This is consistent with our preference to resolve any conflict between these two goals in favor of minimizing the risk of revenue inadequacy, and thus minimizing the impact of uplift charges in order to ensure full funding for all rights, even if this commitment comes at the expense of a smaller release of rights in order to guarantee adequacy of revenues. The ISO should also ensure there are reasonable *force-majeure* clauses to allow revenue shortfalls when there are major transmission network contingencies.

### **3.3. The proposal attempts to balance competing interests for access to LT-CRRs**

It is important to recognize that, fundamentally, the allocation of CRRs is an allocation of a stream of revenues. Thus, while CRRs can be valuable hedging instruments, they can also simply be valuable because they generate income, whether that income balances against a comparable locational energy price risk or not. Because much of the allocation process is, in effect, the division of revenues among stakeholders, disagreements on the allocation mechanism are to be expected. To a first-order approximation, the allocation process is a zero-sum game.

The ISO has tried to navigate this field of competing financial interests by composing a proposal that provides reasonable access to CRRs for all LSEs. This led to the decision to not give existing long-term energy supply contracts priority in the LT-CRR allocation process except through the use of pre-existing contracts to verify sources in the annual CRR allocation process. We believe this appropriately balances the interests of small and large LSEs because smaller LSEs are unlikely to have pre-existing supply arrangements beyond two years. Without this mechanism for source verification, smaller LSEs would be given a lower priority for LT-CRRs than larger LSEs that have pre-existing long-term supply arrangements.

The desire to promote the maximal availability of CRRs has motivated two recent additions to the proposal: (1) the limitation of reassignment of registered LT-CRRs and (2) the exclusion of Trading Hub CRRs from the LT-CRR allocation process. First, the LT-CRRs themselves will not be transferable from the perspective of the ISO. It is important to recognize that firms can still transact the equivalent of a CRR, or any derivative version of them. Specifically, a firm that is allocated a LT-CRR will still be able to construct a secondary transaction that is the functional equivalent of “selling” that LT-CRR. This restriction on the transfer of LT-CRRs from the perspective of the ISO allows LT-CRRs to migrate with load when it leaves one LSE for another. If customers of one LSE migrate to another LSE, a proportionate share of the LT-CRRs held at the CAISO will migrate with those customers to the new LSEs. By restricting the transfer of LT-CRRs, the ISO guarantees that LSEs will not sell the LT-CRRs out from under their customers before they switch to the other LSE. Because a LT-CRR registered with the ISO cannot be reassigned unless load migrates, customers can be confident that a new LSE will have access to some LT-CRRs.

The limitation on re-assignment of CRRs can also, ironically, stimulate trading in equivalent CRRs and derivative instruments. Because there can be no trading of LT-CRRs from the perspective of the ISO, there will be a demand for financially equivalent instruments. The supply of these hedging instruments, backed by individual market participants rather than by the ISO, would unquestionably be a positive development.

## **FINAL**

The exclusion of Trading-Hub CRRs is a more problematic fix to a problem that has been identified in the CRR “dry-run” allocation tests. Trading Hub CRRs are essentially bundles of CRRs comprising small shares of all of the sources located in a given zone to the sink of the CRR. Because a request for a Trading-Hub CRR is equivalent to a request for CRRs from every source in a zone to that sink, their feasibility is limited by the most constrained source-to-sink pair contained within the Trading-Hub bundle. Thus Trading Hub CRRs are subject to the lowest-common denominator of transmission constraints in a region. There is concern that many otherwise feasible point-to-point CRRs may go unallocated if a significant percentage of CRR requests take the form of Trading-Hub CRRs.

The exact nature and magnitude of these potential problems are currently not fully understood. As a precautionary measure, the ISO has proposed excluding Trading Hub CRRs from the LT-CRR allocation process. Firms can still be eligible to nominate and receive Trading-Hub CRRs, but only through the short-term CRR allocation and renewal process. This will prevent any problems that arise from the Trading Hub CRRs in the allocation in the initial year from propagating through the allocations for years 2-10.

We support the decision to exclude Trading Hubs from the LT-CRR allocations. Some parties have noted that the consequences of this exclusion will fall disproportionately on smaller LSEs who may have most or all of their supply contracts from the reference year sourced at Trading-Hubs. Because requests for CRRs that are eligible for conversion into LT-CRRs are limited to verified source-to-sink pairs, firms whose only verified sources are Trading Hubs will have no ability to convert to LT-CRRs. If this concern is viewed as particularly serious, one possible solution is to make LSEs eligible to convert their Trading Hub CRRs into the equivalent bundle of CRRs from the source to sink pairs that comprise the Trading Hub. These “unbundled” Trading Hub CRRs, could then be eligible for conversion into LT-CRRs. If a single source to sink pair presented a bottleneck to the designation of the bundle as a LT-CRR, then this process would eliminate the bottleneck pair, and allow for the allocation of all of the remaining, feasible pairs in the bundle as individual LT-CRRs. We recommend that this proposal be considered in the CRR Dry Run analysis and in further study of the impact of Trading Hub nominations on the CRR allocation process.

### **4. Conclusions**

For the reasons outlined above, we support the ISO’s framework for the allocation of LT-CRRs. One last point to emphasize is that the ISO’s proposal has evolved in way that takes maximum advantage of the stakeholder processes that preceded it. The current proposal represents relatively small changes from the process for allocating short-term CRRs. This process was vetted by a long stakeholder process and has been approved by FERC. In this sense, the current proposal constitutes the ISO’s best chance to accomplish the challenge of reconciling competing design goals in a very short time frame.

That said, we also note that there is much uncertainty about what kinds of allocations this process will actually yield, as well as the subsequent nodal energy prices that will determine the value of the CRRs that are allocated. The linking of ownership of ten-year CRRs to this

## **FINAL**

allocation process greatly raises the financial stakes to all involved. Concerns about uncertainty have led some parties, such as Pacific Gas & Electric and San Diego Gas & Electric to request some ability to revisit the allocation process later if its results are considered to be aberrant or grossly inequitable. We are also concerned about the uncertainty of the process. Because of this, and because of the financial risk associated with fully funding CRRs, we support a reduction in the amount of CRRs that can be converted to LT-CRRs during the first year of allocations. This reduces the stakes somewhat, and allows for a change in course for the allocation of remainder of the long-term rights during subsequent years. In this way changes to the allocation process can be used to redress any perceived and unexpected inequities that arise from the initial allocation.