

California Independent System Operator

**Options
for the Design and Release of
Long Term Transmission Rights**

November 28, 2006

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Options for the Design and Release of Long Term Transmission Rights

1 Executive Summary

Up to this point the CAISO has been discussing with stakeholders a number of approaches for designing and releasing long term transmission rights (LT-TR) in conjunction with the start-up of the MRTU market redesign on November 2007, which is referred to as "MRTU Release 1." Based on the CAISO's inability at this time to introduce new elements or significant changes into MRTU Release 1 and still maintain the target November 2007 implementation date, the CAISO and the stakeholders have recently been exploring a two-phase approach to LT-TR, whereby a highly simplified version of the LT-TR design and release process would be offered with MRTU Release 1, with a more complete version to become available for CRR Year 2 effective January 1, 2009.

Based on significant feedback from stakeholders, the CAISO proposes now to depart from the prior effort to implement a highly simplified LT-TR approach with MRTU Release 1. This two-phase approach has two major issues from the perspective of our stakeholders. First, the simplified version of the LT-TR design and release process would have to forego several of the features parties have indicated a preference for, and as such may not be a very desirable LT-TR approach even as an interim measure. Second, there have been concerns expressed about whether the simplified Release 1 design might unduly constrain the CRR Year 2 design because of the need to make the two designs compatible.

The CAISO has considered both of these problems and come to the conclusion that the best approach would be not to implement a simplified Release 1 version of LT-TR, and instead to offer for consideration two possible alternatives:

- Alternative 1 is not to implement a Release 1 version of LT-TR at all, and to focus the LT-TR effort henceforth to developing a comprehensive LT-TR design and release processes for CRR Year 2 and beyond. Under this approach¹, the CAISO would begin the LT-TR release process in 2008, and these LT-TR would be effective starting January 1, 2009.
- Alternative 2 is to accept a modest delay in the start-up of the MRTU markets for several weeks to provide the opportunity to implement a more complete LT-TR design that

¹ It should be noted that a decision not to implement LT-TR at all for MRTU Release 1 does not mean that parties would be completely without any means to obtain transmission rights beyond one year in Release 1. As has been discussed in the CAISO's MRTU Tariff filing, as well as the CAISO's comment filings on the LTFTR NOPR and in the recent LT-TR stakeholder process, the filed CRR proposal under MRTU provides, starting with CRR Year 2, a Priority Nomination Tier (PNT) whereby load-serving entities (LSEs) who have been allocated CRRs in CRR Year 1 may nominate a portion of their allocated rights into a high-priority renewal process that the CAISO will conduct prior to releasing new CRRs, thereby providing a high degree of certainty that these renewals will be feasible. Additional details on the PNT are contained in the MRTU Tariff filing and the Business Practices Manual (BPM) for CRRs.

would effectively be the same as the preferred Year 2 design except for a few features² in software capabilities that would have to wait until Year 2.³

The proposed process and time line are discussed in Section 2. Section 3 then presents the CAISO's proposed design framework, identifies several key open issues that will need to be resolved by the time of the compliance filing, and indicates the specific software capabilities that would not be feasible to implement under Alternative 2 but could be available in time for the CRR Year 2 release process.

The CAISO seeks stakeholder feedback regarding both the two alternatives presented in this paper as well as the original November 7th Straw Proposal. Written comments should be sent to LT-FTR@caiso.com by close of business on Friday, December 8.

2 Proposed Process Going Forward

The CAISO proposes the following schedule for stakeholder involvement over the next two months. This important effort is meant to give all interested parties reasonable opportunity to contribute to developing the design framework and implementation plan for LT-TR, and for the CAISO to gain support and a fair level of consensus among stakeholders for its January 29 compliance filing to FERC.

Wednesday, November 29:

9:00 am to 5:00 pm -- Stakeholder meeting at the CAISO

- Presentation of two options for stakeholder review and discussion
- Feedback (discussion and follow-up) on trade-offs of key design features within each option

Friday, December 8:

Written stakeholder comments should be sent to LT-FTR@caiso.com.

² As explained elsewhere in this document, these features include: 1) the ability for parties to nominate or bid for a "block" of LT-CRRs across multiple years; 2) the ability for parties to offer for sale into the CAISO's auction any LT-CRR they received previously; and 3) the ability to add varying percentages to the grid's capacity that would be available for the LT-CRR auction.

³ Further, the Alternative 2 proposal is conditional on the development of a compliance filing and receipt of FERC approval for a proposal that is feasible to be implemented by the time the CAISO must begin its allocation of CRRs for CRR Year 1. Otherwise, schedule and procedural requirements would dictate that the CAISO revert to Alternative 1 and postpone allocation of LT-CRRs to CRR Year 2.

Tuesday, December 19:

9:00 am to 1:00 pm -- Stakeholder conference call (with web-conferencing capabilities)

- Presentations with proposals for resolving Open Issues within design framework
- Discussion of identified Open Issues
- Discussion of LT-TR Implementation Plan

Tuesday, January 9:

10:00 am to 5:00 pm – Stakeholder meeting at the CAISO

- Review proposed LT-TR Implementation Plan
- Review final design trade-offs made for chosen options
- Resolution of key Open Issues

Tuesday, January 16:

9:00 am to Noon – Stakeholder conference call

- Finalize LT-TR design framework
- Finalize LT-TR Implementation Plan
- Resolve any remaining LT-TR policy issues
- Final stakeholder written comments

In recognition of this ambitious time table and to facilitate the involvement of as many stakeholders as possible, the CAISO further proposes:

- Wherever possible, a summary of these public discussions will be posted for the benefit of those not able to participate and to identify and record areas of consensus as quickly as possible.
- Stakeholder written comments would be encouraged at any time throughout this two-month process and not just at specific deadlines. The CAISO will endeavor to respond appropriately to such posted comments as quickly as possible to facilitate resolution of open issues. Written comments would be posted promptly at:
<http://www.aiso.com/1845/1845dca750770.html>
- In addition to the meetings proposed above, CAISO staff involved in this LT-TR effort will make every effort possible to confer with individual entities or small groups to hear concerns and help resolve or explain specific open issues.

The CAISO will focus discussion at the November 29 meeting on the process outlined above, and encourages stakeholders to raise any concerns or offer alternatives to this proposed process.

3 Design Options for Long Term Transmission Rights

3.1 Starting Assumptions and Principles

Based on the design guidelines required by FERC in the Final Rule, the CAISO believes that the design for Congestion Revenue Rights (CRR) as filed in the MRTU tariff can be modified to provide LT-TR. As discussed in the CAISO's September 26, 2006 White Paper on this topic, it would be excessively complicated – and there is no need – to design and implement a LT-TR instrument that is substantially different to and must coexist with CRRs. With this observation the design options discussed in this paper all build upon the filed design and release processes for CRRs, and therefore the paper adopts the term Long Term Congestion Revenue Rights (“LT-CRR”) for the balance of this discussion.

In addition to using the CRR design as a starting assumption, the CAISO proposes the following guiding principles for formulating the LT-CRR proposal:

1. Comply with the seven guidelines required by FERC in the LT-FTR Final Rule.
2. Utilize the flexibility offered by the Final Rule to develop a proposal that is most suited to the California context and the MRTU markets.
3. Promote efficient use of existing transmission and generation assets.
4. Promote efficient investment in transmission and generation.

3.2 Framework for a Straw Proposal

Although this paper is not intended to provide all the details of a complete proposal for LT-CRR, the CAISO does believe that certain framework elements may be viewed as leading candidates at this time based on the efforts to date to identify and assess various alternatives in the context of the stakeholder process. The CAISO therefore proposes the following elements for a LT-CRR framework. Where open issues are identified below, they are discussed in more detail in later sections of this paper. Finally, note that this section focuses primarily on the release of LT-CRR utilizing existing transmission capacity. A later section of this document discusses transmission planning and approaches for allowing parties to sponsor transmission upgrades to obtain LT-CRR that may not be feasible on existing capacity.

1. Perform an annual LT-CRR “Tier Zero” process that would be conducted in conjunction with and just prior to the annual release process for seasonal CRRs.
2. Tier Zero would consist of an allocation process for eligible LSEs, followed by an auction process open to all creditworthy parties. Allocation results would be released prior to the close of bidding for the auction so that allocation participants would know what they were awarded and all auction participants would know the impact of the allocation on the availability of network capacity for the auction.
3. The LT-CRR instrument would consist of a sequence of 10 one-year CRR obligations. These one-year CRR obligations would be differentiated by time-of-use (TOU) – either peak or off-peak – but not by season. Thus the Tier Zero allocation and auction processes would each require the running of 20 CRR optimizations or simultaneous feasibility tests (SFTs). Parties would be able to nominate or bid for different CRRs and MW quantities in each year/TOU. Also, with a software enhancement the CAISO is considering for CRR Year 2, parties would be able to nominate or bid for a “block” of CRRs having a specific source and sink and a constant MW quantity across multiple

consecutive years. In addition, in the auction, in CRR Year 2 and beyond parties would be able to offer for sale any LT-CRR they received in a prior LT-CRR process either through allocation or auction. For the first year, parties who hold CRRs and wish to sell them would have to transact bilaterally in the secondary market and register such transactions in the CAISO's Secondary Registration System (SRS).

4. The release of LT-CRR would be limited by reducing the transfer capacities of all grid facilities to a fraction of their full values.
 - a. Open issue: What percentage of grid capacity should be available for the LT-CRR allocation process?
 - b. Open issue: Should the same percentage of grid capacity be available all at once for all years of the 10-year horizon, or should a "staggered release" be adopted whereby the amount of grid capacity declines over the 10-year horizon and additional capacity is made available with each successive running of the annual LT-CRR process?
5. The allocation of LT-CRR to LSEs would also be limited by allowing at most a fixed percentage of each LSE's annual eligible MW quantity to be nominated as LT-CRR.
 - a. Open issue: What percentage of each LSE's annual eligible quantity should the LSE be allowed to nominate? Presumably, if a staggered approach is taken with respect to grid capacity, the same should apply to LSEs' eligible quantities in each year of the 10-year allocation horizon.
6. CRR sinks that LSEs may nominate will be the same as for the annual allocation of seasonal CRRs, that is, sinks must be consistent with the location where the LSE's load is settled. This means that some parties will be able to nominate CRR sinks other than the default LAPs. For example, Participating Loads could nominate as a CRR sink the PNode or custom aggregation that is used for their market settlement.
 - a. Open issue: Should sub-LAPs be allowed as sinks for LT-CRR?
7. LSEs with load external to the CAISO control area ("OCAL") would be able to participate in the allocation process on terms analogous to the terms specified in the MRTU Tariff for the annual and monthly CRR allocation processes.
 - a. Open issue: In order to enable wheel-through transactions to be allocated LT-CRR, should the LT-CRR allocation process allow OCAL to nominate a scheduling point as a source, subject to the same source verification process that would apply to internal LSEs wishing to nominate such sources?
8. Open issue: Should there be any limitations on which sources an LSE can nominate for LT-CRRs? There are several aspects of this issue and alternative approaches to be considered, and depending on the preferred alternative several details to be specified.
 - a. Do not impose any limitations at all; simply allow each LSE to nominate their eligible quantities from whatever sources they choose.
 - b. Link eligibility to nominate a CRR source to generation ownership by the LSE or a contractual arrangement. How would this work? If such linkage is utilized should it refer to a past time period or can eligibility for a particular source be established based on new ownership changes or contracts?
 - c. Other possible ways to limit source nominations?

9. Open issue: Should demonstration of long-term supply arrangements be used to determine eligibility for LT-CRRs or priority in the LT-CRR optimization, or for some other purpose? Again, some alternatives to consider, and under any alternative there are many details to be specified.
 - a. Do not use long-term supply arrangements at all.
 - b. Use long-term supply arrangements to assign a priority for particular CRR sources in the optimization but not as a requirement for LT-CRR eligibility.
 - c. Use long-term supply arrangements as a requirement to be eligible to be allocated LT-CRR.
 - d. If long-term supply arrangements are utilized at all, should they be arrangements made in the past or can they include new arrangements?
10. Additional grid capacity beyond what was encumbered as a result of the LT-CRR allocation process would be made available for the LT-CRR auction.
 - a. Open issue: How much additional grid capacity should be made available for the auction?
 - b. Open issue: Analogous to the allocation issue mentioned above, should the amount be a fixed over the 10-year horizon or staggered? The answer to this should probably be the same as for the allocation process.
11. Awards of LT-CRR to LSEs through the allocation process would count towards their eligible quantities in the annual allocation of seasonal CRRs.
12. The Priority Nomination Tier (PNT) in the annual allocation of seasonal CRRs would be retained, with renewal through the PNT subject to the SFT as filed in the MRTU tariff, and with the following modifications:
 - a. Open issue: Should the upper bound on the PNT for CRR Year 2 (the first renewal year) be increased to 66 percent of the LSE's seasonal eligible quantity for each season/TOU (i.e., the upper bound that the filed tariff stated would be available for CRR Year 3 and beyond)? This upper bound translates to 50 percent of the Load Metric from the LSE's load duration curve for each season/TOU.
 - b. Awards of LT-CRR to LSEs through the allocation process would count towards their eligible quantities to nominate in the PNT.
13. Extend the "full funding" feature of LT-CRR to all CRRs so that there is no difference with regard to the financial value of these rights for any given IFM settlement hour based on whether the right was issued as a long-term, seasonal or monthly CRR. It should be noted that the full funding approach proposed in this framework does not mean that there is zero risk of revenue shortfall for CRR holders. This risk should be very small, however, due to the proposed enhancements to the CRR balancing account.
14. Utilize the CRR Balancing Account as defined in the MRTU Tariff as the vehicle for accumulating surplus funds to be used to compensate CRR holders for hours in which there are revenue shortfalls.
 - a. Open issue: Should any remaining balancing account surplus at the end of the year be rolled over to the next year or paid out to some class of parties? If the latter, how should the funds be distributed?

- b. Open issue: Should CRR auction revenues be paid into the balancing account as additional funds to support CRR full funding, or should they be paid to the PTOs?
- c. Open issue: Should any revenue shortfall at the end of the year be absorbed by CRR holders or charged to some class of parties? If the latter, how should this cost be allocated?

3.3 Discussion of Specific Open Issues

3.3.1 Staggered Approach to Release of LT-CRRs

The idea of the staggered release is to set the upper bound on transmission capacity to be available for LT-CRR allocation in the first year of the 10-year time horizon, and then reduce this upper bound for each subsequent year of the time horizon in stair-step fashion. For example, when the process is run for the first time in 2008, if 20 percent of grid capacity is to be made available for allocation for the first year of LT-CRR coverage (2009 in this case), then 18 percent would be available for the second year, 16 percent for the third year, and so on down to 2 percent for the tenth year (2018).

This approach would allow the CAISO to make additional capacity available for LT-CRR allocation each time the annual LT-CRR process is conducted, even if there are no transmission expansions or upgrades in the intervening years.

The table below indicates the amounts of transmission capacity that would be available for LT-CRR allocation in the first and successive executions of the LT-CRR process, using 20 percent as the upper bound on capacity for LT-CRR allocation and staggering the capacity amounts over the 10-year horizon of the LT-CRR release process.

For example, in the 2010 running of the LT-CRR process the CAISO would make an additional 2 percent of grid capacity available for LT-CRR for each year from 2011 through 2020, so that the full 20 percent amount is available for 2011, 18 percent for 2012, etc. The actual MW values associated with these percentages would of course reflect the impact of transmission upgrades once they are in operation.

		Year LT-CRR Release is Conducted					
		2008	2009	2010	2011	2012	2013
Year of CRR Term*	2009	20%					
	2010	18%	20%				
	2011	16%	18%	20%			
	2012	14%	16%	18%	20%		
	2013	12%	14%	16%	18%	20%	
	2014	10%	12%	14%	16%	18%	20%
	2015	8%	10%	12%	14%	16%	18%
	2016	6%	8%	10%	12%	14%	16%
	2017	4%	6%	8%	10%	12%	14%
	2018	2%	4%	6%	8%	10%	12%
	2019		2%	4%	6%	8%	10%
	2020			2%	4%	6%	8%
	2021				2%	4%	6%
	2022					2%	4%
2023						2%	

****The percentages above represent cumulative quantities of grid capacity that are released.***

One drawback of the staggered approach described above is that if a party wants to obtain the same MW quantity of a particular source-sink combination for multiple years, the quantity that party will be able to obtain will most likely be limited by the available grid capacity in the last year of the desired time horizon. For example, if in the 2009 allocation process an LSE wants 100 MW A-to-B for all 10 years 2010 to 2019, the fact that only 2 percent of grid capacity is available for the year 2019 will likely determine the maximum quantity that LSE can obtain for the entire 10 years.

An alternative to this approach would be to release the same quantity of grid capacity, say 20 percent, for all years of the 10-year horizon of the LT-CRR process that is conducted in 2008. This would mean, however, that when the LT-CRR process is conducted again in 2009 for the years from 2010 through 2019, the only ways to make additional grid capacity available would be to (a) add in the capacity created by new transmission facilities and upgrades, (b) increase the 20 percent limit to a higher upper bound, or (c) conduct an allocation process for any grid capacity that may not have been requested in the previous year allocation. Of course, under this approach when the 2009 allocation process is conducted the full 20 percent would be available for the year 2019 since no CRRs for that year would have been released in the 2008 process.

Finally, the CAISO suggests that if the staggered approach is adopted, the staggering should apply to the MW quantities LSEs are eligible to nominate in the LT-CRR allocation as well as the quantities of grid capacity available in the LT-CRR allocation and auction processes.

3.3.2 Long Term Supply Arrangements and Source Verification

There are two interrelated questions to be discussed in this section. First, should there be any limitations on the sources LSEs are allowed to nominate in the LT-CRR allocation? Second, what role should long-term supply arrangements play in the LT-CRR allocation? There is a wide range of possible ways to answer these questions, and at this point the CAISO believes that further discussion of the underlying issues is warranted. The following statements capture some of the main alternatives. Throughout all these alternatives, the starting assumption is that the only allowable sources would be generator PNodes, intertie scheduling points and trading hubs, but not arbitrary PNodes or LAPs.

1. Allow LSEs to nominate LT-CRR from any of the allowable sources they want, without requiring any demonstration that they are using a specific source to meet their service obligations. Do not utilize any priorities among LSE nominations if pro-rationing is required.
2. Allow LSEs to nominate LT-CRR from any of the allowable sources they want, without requiring any demonstration that they are using a specific source to meet their service obligations. If an LSE voluntarily demonstrates a supply arrangement associated with a particular source, apply a higher priority to that nomination than to nominations without such demonstrations in the event pro-rationing is required.
3. Require demonstration of a supply arrangement associated with each source an LSE wants to nominate in the allocation process, (a) for a percentage (e.g., 50%) of each LSE's eligible LT-CRR quantity, or (b) for all nominations in the allocation process. To explain further, under variant (a) an LSE that is unable to demonstrate any supply arrangements associated with source nominations would still be able to nominate up to 50 percent of its total LT-CRR eligible quantity, whereas under variant (b) that LSE would not be able to nominate any LT-CRRs.
4. What kinds of supply arrangements should be allowable to support source nominations? The following alternatives are not necessarily mutually exclusive, but represent various possibilities for inclusion as acceptable demonstration for nominating a LT-CRR source.
 - a. Ownership of a generating plant by the LSE.
 - b. Supply contracts. Any minimum term length? Should the MW of a contract be prorated based on contract term length?
 - c. Only supply arrangements (ownership and contracts) that were established prior to a specified past date or within a reference period in the past.
 - d. New supply arrangements (ownership and contracts) should be acceptable as support for source nominations.

3.3.3 The Tier Zero LT-CRR Auction

Above it was suggested that additional grid capacity would be made available in the LT-CRR auction beyond the amount that was available in the allocation. The simplest approach would be to add a fixed percentage of grid capacity on top of the amount available for LT-CRR allocation. For example, suppose 10 percent of additional grid capacity is to be made available for the LT-CRR auction process. Then the CAISO would rate each grid facility at 30 percent of its full rating in formulating the network model for the auction process. If the staggered approach is adopted as shown in the table above, then the annual amounts would be 30 percent for the first year of the 10-year horizon, 27 percent for the second year, and so forth down to 3 percent for the tenth year.

Another approach, which would not be feasible for incorporation in Alternative 2 but could be considered for CRR Year 2, would be to map fixed injections and withdrawals onto the network model corresponding to all the CRR that had been previously allocated or otherwise modeled by the CAISO to represent TOR, ETC and CVR, calculate the resulting flows on all grid facilities, and then add a fixed percentage of each facility's thermal rating above these flows to calculate the facility ratings for the auction.

Consider the following example. Suppose the OTC on a particular line is 100 MW after allocation of CRR to merchant transmission and modeling of TOR.⁴ For the LT-CRR allocation process, suppose the available network capacity is limited to 20 percent of the rated values, so 20 MW of net flow on this line would be the maximum allowable in the SFT for the allocation. Suppose further that as a result of the LT-CRR allocation there is 15 MW of flow on this line. Now suppose the design for the LT-CRR includes making an additional 10 percent of network capacity available for the LT-CRR auction. Then the flow limit on this line would be 25 MW (= 15 + 10%*100) for the auction. Thus, under this approach, a fixed amount of grid capacity is added above what was actually encumbered in the allocation process, rather than adding to what was available for allocation.

As noted, however, this approach is more complicated and could not be implemented until the CRR Year 2 release process.

3.4 Other Issues Regarding LT-CRR

3.4.1 Auction Revenue

All LT-CRRs bought and sold in the auction will be settled at the auction market clearing prices. Because there will be 20 independent auctions there may be different clearing prices for each of the ten forward years and two TOU periods encompassed by the LT-CRR auction.

As suggested previously as an open issue, auction revenue from all CRR auctions could go into the CRR Balancing Account instead of the PTOs, in order to help ensure revenue adequacy for all CRR holders. The CAISO would clear each year of the auction separately and keep separate balancing accounts for each year.

3.4.2 Impact on Outstanding LT-CRR of Withdrawal of a PTO from CAISO

The CAISO tariff allows a PTO to withdraw its transmission from the CAISO grid upon two years notice. At this time the CAISO does not see any practical and reasonable way to protect the holders of LT-CRR from the impacts of such a withdrawal. Unless parties have suggestions to offer, the CAISO expects that this will be a risk the holders of LT-CRR will have to manage.

If a PTO does withdraw transmission from the CAISO grid, the CAISO would reconfigure its network model to reflect the new arrangements. For example, the reconfigured model would likely include new intertie points connecting the CAISO grid with the withdrawing PTO, and any

⁴ Note that in this process the modeling of ETC and CVR does not affect the calculation of the amount of transmission capacity available for the allocation and auction processes. Instead, the CAISO models ETC and CVR as nominated CRR obligations within the SFT for the CRR allocation process. The modeling of these rights will therefore affect the amounts of non-ETC non-CVR nominations of CRRs that clear in the allocation process, which is necessary in order to account for the impact of the "perfect hedge" settlement mechanism for ETC and CVR rights holders.

outstanding LT-CRR that had its source or sink either within the grid of the withdrawing PTO or at an intertie that no longer connects directly to the CAISO grid would be reconfigured to utilize one of the new intertie points. The CAISO would then rerun the SFT for each affected LT-CRR term (year/TOU), as a result of which some of the previously awarded LT-CRR may become infeasible and would be prorated.

If both the source and the sink of an LT-CRR are within the withdrawing PTOs transmission boundaries or utilize an intertie that is no longer connected to the CAISO grid, that LT-CRR would no longer be valid on the CAISO grid and would not even be considered in any reruns of the SFT.

3.4.3 Bilateral Trades of LT-CRR

LT-CRRs would be transferable in the secondary market utilizing the CAISO's Secondary Registration System (SRS) in the same manner as seasonal and monthly CRRs. Such SRS transactions are limited in granularity to single days in accordance with the TOU structure.

3.4.4 Reassignment of LT-CRR to Reflect Load Migration Between LSEs

When load migrates between LSEs, LT-CRR holdings will be subject to the same reassignment requirements as specified for Seasonal CRR. Details of this remain pending and the CAISO is considering a working group in coordination with the CPUC to work out these important details related to load migration and the resulting shifts in CRR holdings.

3.4.5 LAP Disaggregation During the Term of LT-CRR

Most LSEs serving internal load will schedule and be settled at Load Aggregation Points (LAPs). Initially the MRTU design will feature three default LAPs corresponding to the three IOU service territories. The September 21, 2006 FERC Order on MRTU stated, however, that the CAISO must move to greater granularity of load settlement in the future, and therefore the question arises as to how to treat outstanding LT-CRR that are defined to sink or source at default LAPs that may no longer be used for market settlement.

The CAISO believes that this problem should be addressed in a manner that does not impact CRR revenue adequacy, and therefore any solution must respect simultaneous feasibility. The CAISO would propose, therefore, not to redefine such LT-CRR but to allow the holders of such rights to reconfigure them by breaking down the default LAP source or sink into the new sub-LAPs that it comprises, and dividing the LT-CRR MW among these sub-LAPs in proportion to the load distribution factors that were utilized in the SFT where these LT-CRR were released. Parties could then sell bilaterally or in a subsequent auction the LT-CRR associated with sub-LAP sinks they no longer want to hold.

4 Transmission Planning

[This section is identical to the "Transmission Planning" section within the previously posted November 7, 2006 White Paper on LTTR.]

To meet the requirements of FERC Order 681, the CAISO proposes three new processes related to LT-CRRs to be incorporated within its comprehensive planning for transmission upgrades to the CAISO system. Together, these initiatives should produce a result that:

1. Ensures the total MW amount of LT-CRRs that are released will remain feasible, and will not be degraded throughout their full terms;

2. Calculates the amount of CRRs that should be awarded to the sponsor of “merchant transmission” projects, and
3. Identifies and assigns responsibility for expanding transmission facilities that are necessary to ensure the availability and feasibility of LT-CRRs needed to support long-term power supply contracts.

The following sections explain these processes conceptually and suggest how each should meet the requirements of the CAISO’s LT-CRR compliance filing.

4.1 Ensuring Feasibility for the Full LT-CRR Term

The CAISO believes Paragraphs 453 – 455 of Order 681 make clear that the CAISO transmission planning process must ensure that LT-CRRs are feasible for their entire term.

To accomplish this result, the CAISO recommends active monitoring of binding constraints that represent existing LT-CRRs during planning study assessments.

The data from the LT-CRR annual simultaneous feasibility test (SFT) that includes all the binding constraints would be incorporated within the CAISO’s Transmission Economic Assessment Methodology (TEAM) as well as other analyses of possible transmission upgrades. Then, as transmission alternatives are considered, the CAISO would analyze the potential changes in flows on these binding constraints.

The CAISO anticipates that most proposed transmission upgrades would reduce congestion; that is, the flows on binding constraints would be reduced or the flow capability through constrained facilities would be increased. For these projects that alleviate or avoid exacerbating these binding constraints, the feasibility of identified LT-CRRs would be ensured.

For those unusual and occasional transmission projects that could result in substantial adverse impacts on the binding constraints and cause infeasibility in certain LT-CRRs, the transmission analysis would identify this outcome within its assessment of the project and would modify the planned project to mitigate the potentially adverse impact.

It should be emphasized that limiting LT-CRRs to 50% or less of the capacity of the system makes it highly unlikely that transmission upgrades could threaten to degrade any LT-CRRs. The CAISO anticipates that if a greater percentage of the transmission system capability for congestion hedging is covered by LT-CRRs, the CAISO’s planning process would face greater challenge to assess and maintain the feasibility of these LT-CRR instruments.

Thus, the CAISO emphasizes that incorporation of a review of LT-CRR feasibility within TEAM would be in addition to other transmission planning activities aimed at relieving highly congested areas, such as studies on transmission projects that relieve binding constraints that are causing high LMPs and impacting shadow prices. The combination of these activities within the CAISO’s planning efforts also should help ensure that transmission investment is made in a way that does not diminish the value of the MW amounts of LT-CRRs throughout their guaranteed renewal or term of existence.

4.2 Methodology for Determining Amount of CRRs for Merchant Transmission

The MRTU Tariff allows entities to develop transmission projects at their own cost and to receive the incremental CRRs that the project creates. Thus, the quantity of CRRs allocated to “merchant transmission” developers would be commensurate with the transfer capacity that the project adds to the CAISO grid.

FERC's September 21, 2006 Order on the MRTU Tariff required details regarding CRRs for merchant transmission sponsors to be submitted in a compliance filing to FERC. The CAISO's October 23, 2006 "Request for Clarification and Rehearing" asked that FERC permit the filing of tariff language related to these additional "merchant transmission" details on a time frame consistent with the requirements of the LT-FTR Final Rule.

FERC Order 681 requires that the methodology for determining the quantity and geographic sources and sinks for these incremental CRRs be specified before the CAISO begins releasing LT-CRRs. Assuming the CAISO initiates the release of LT-CRRs no sooner than a few months before MRTU start-up, a detailed explanation of this methodology would not be necessary for the January compliance filing on LT-FTRs, but should be filed at FERC by the spring of 2007.

The CAISO has formed an internal team to develop this methodology. Stakeholders can expect that a White Paper will be posted soon and that public input and discussion will be requested within a separate stakeholder process.

4.3 Facilitating Transmission Expansion

Currently any entity – such as transmission developers (PTOs or merchant transmission) or transmission customers (LSEs) -- can identify a possible transmission upgrade and seek its incorporation into the CAISO planning process. Under the CAISO's oversight through the FERC-approved interconnection procedures, the PTOs perform System Impact and Facilities studies to determine whether and how the project can be safely and reliably integrated with the ISO Controlled Grid. Depending on the project, construction could be financed through the TAC or by the developer. If the developer finances the project, the CAISO would quantify the amount of incremental CRRs that the merchant project would create and allocate LT-CRRs as described in the previous section.⁵

Order 681 requires the planning process to incorporate requests for LT-CRRs as well as actual transmission projects. Paragraph 456 states that *"...when a transmission customer enters into a long-term power supply arrangement and is willing to pay for any transmission expansion or upgrades which may be necessary in order to make long-term firm transmission rights feasible over the entire term of the contract, that expansion or upgrade must be incorporated into the transmission organization's planning process. This will require that the expansion plans that transmission owners submit to the transmission organization incorporate any expansions necessitated by such long-term supply arrangements. We believe that it is important for the regional planning process to take account of any upgrades or expansions of the transmission system that may be required to ensure FTRs needed to support long-term power supply arrangements are available."*

Thus the CAISO proposes new procedures within its planning efforts to address transmission customers (LSEs) requests for CRRs to support long-term power supply contracts when they are willing to pay for the upgrades needed to make those CRRs feasible.

First, the CAISO will incorporate into future year congestion studies any long-term power supply information that is voluntarily provided by LSEs. The results of these posted studies could

⁵ Transmission projects needed to interconnect new generation projects are identified through the CAISO's Large Generator Interconnection Procedures, and the Interconnection Customer can choose to receive CRRs for these upgrades in lieu of a five-year payback. However, a reliable interconnection and resource adequacy deliverability are the primary design objectives for these upgrades rather than the quantity and location of incremental CRRs.

facilitate an LSE's decision to pursue customer funded transmission upgrades to create incremental CRRs for their own use.

Additionally, the CAISO will identify the transmission upgrades that are necessary to ensure the feasibility of the quantity and location of LT-CRRs requested by the transmission customer. The CAISO will require PTOs to incorporate these necessary transmission upgrades into the individual transmission expansion plans submitted to the CAISO, so that the overall CAISO transmission plan will incorporate both the PTO plans and these customer funded upgrades.

4.3.1 Informational Studies on Future Congestion and Transmission Upgrades

In order to provide information to transmission customers about future transmission congestion that may need to be hedged by customer funded transmission projects, the CAISO will incorporate information voluntarily submitted by LSEs – such as long-term power supply arrangements -- into future year congestion studies. These studies will identify potentially congested paths and transmission upgrades that would mitigate congestion that impacts long term power supply arrangements.

The results of these studies will be publicly available to help any LSE decide to pursue customer funded transmission upgrades for incremental CRRs for their own use. Transmission customers may want to review results of the proposed future year congestion studies to determine whether currently available CRRs will meet their needs for the expected congestion on the planned transmission system.

These studies are expected to be performed biennially, with updates if needed during the off-year. The studies will entail generation production simulations on the full WECC network model maintained by the WECC. At the beginning of each study the CAISO will update the model to include all transmission projects expected to be in operation during the particular future study years chosen. Long-term power supply information voluntarily provided by LSEs will be used to verify generation development, retirement, and bidding assumptions used in the models and studies.

An economic assessment based on the TEAM methodology would also be performed on the identified upgrades that would mitigate significant congestion for long-term power supply arrangements – so that these upgrades, if determined to be economically justified additions to the CAISO grid, would be proposed in the CAISO Transmission Plan even without a project sponsor or an LSE request.

For LSEs, these studies should provide the best available information about congestion risks on the planned transmission grid and how additional transmission capacity could mitigate those risks of congestion.

4.3.2 Identifying Upgrades Needed for Requested LT-CRRs

The new process for transmission upgrade requests to accommodate long-term contracts resembles the generator interconnection process that is currently managed by the CAISO. For example:

- Transmission customers would submit requests for the amount of LT-CRRs needed to support their long-term power supply contract. They could also include one specific transmission upgrade alternative for the ISO to consider in its analysis (e.g. a new transmission line)

- Such requests would be put into a queue for detailed studies to identify the upgrades needed to create the requested quantity of LT-CRRs. Similar to the generator interconnection process, these system impact and feasibility studies assess the impact upon the planned transmission grid and identify the necessary upgrades to create the requested LT-CRRs. The transmission customer submitting the request would pay for the cost of these studies.

In order to coordinate the development of these transmission projects with the CAISO's overall transmission planning process, the CAISO expects that a transmission project queue would be coordinated with the existing generator interconnection queue as well as PTO-sponsored transmission projects.

In accordance to the policies reflected in the generator interconnection procedures, cost responsibility for reliability upgrades -- such as those upgrades needed to correct short-circuit duty problems created by the transmission facilities needed for the requested CRR needs -- would be based on queue position. However, unlike the generator interconnection process, the transmission model used to estimate the quantity of incremental CRRs that would be created would be based on the expected operating dates of the projects rather than their queue positions. Furthermore, the actual quantity of LT-CRRs that would be created would be determined at the time the identified transmission upgrades are permanently energized. (The CAISO does not intend to release incremental CRRs until the incremental capacity of the grid is in service.)

The following explanation outlines how the CAISO's transmission planning process would accommodate transmission customers who are willing to pay for any transmission expansion or upgrades which may be necessary in order to make their requested LT-CRRs feasible over the entire term of their long-term power supply arrangement:

1. Review Existing and Planned Transmission Capability

Initially, the CAISO would encourage any transmission customer to consider whether existing transmission capability makes available enough LT-CRRs or seasonal CRRs (that could be renewable through the Priority Nomination Tier) to meet its needs. The CAISO also would encourage review of the posted results of the future year congestion studies that are outlined in the previous section to determine whether additional facilities are needed to meet the LSE's needs for CRRs.

Assuming the transmission customer has explored the release of currently available LT-CRRs and seasonal CRRs and considered future congestion studies on the planned CAISO grid, the LSE then could submit a facilities request to the CAISO to identify the needed transmission facilities to allow the customer to obtain his desired amount of LT-CRRs at some time in the future.

2. LT-CRR Facilities Request Process

The facilities request would identify the needed transmission facilities to allow the transmission customer to obtain the desired amount of LT-CRRs, using a transmission model corresponding to the year for which the customer would first like to obtain the CRRs. The transmission customer would also specify the customer's desired year for these CRRs to be available. Upon its request, the customer (LSE) would be given a queue position based on the date of the customer's request. The CAISO and the customer would participate in a scoping meeting, and then the CAISO would proceed with a "LT-CRR Facilities Study," with the cost charged to the customer.

3. LT-CRR Facilities Study

California ISO

The CAISO would perform a “LT-CRR Facilities Study” by running a number of SFTs on the planned transmission system with the requested LT-CRRs, all previously awarded Incremental CRRs, all currently active LT-CRRs and other transmission encumbrances. This study would substitute the planned transmission system for the network model used in the SFT. In other words, all CAISO approved transmission projects would be modeled based on their expected operating year. Basically, the similar methodology that will be used to determine incremental CRRs for any merchant project would be utilized in this process for identifying the facilities.