Appendix B

Criteria for Determining Competitive versus Non-Competitive Paths

This appendix describes the procedures and considerations the CAISO will use to periodically assess whether transmission paths are being appropriately classified as “Competitive” or “Non-Competitive”. As noted in the main document, the CAISO intends to perform these periodic assessments until such time that it can implement a dynamic “pivotal supplier” analysis, similar to what is currently being developed in the PJM market.

As the CAISO stated in its July 22, 2003 MD02 filing at page 57, footnote 65:

“The initial list of non-competitive paths will be all of the transmission constraints modeled in the SCUC except Path 15, Path 26, the inter-ties, and local transmission constraints in pre-designated local generation pockets (e.g. Miguel substation). As the CAISO gains experience with LMP and the full network model, the CAISO will periodically review the competitiveness of transmission constraints and adjust the list of competitive paths accordingly. These assessments will examine whether frequently congested paths that are deemed “competitive” are in fact competitive, and whether congested paths that are deemed “non-competitive” are in fact competitive. The methodology to be used for assessing the competitiveness of managing congestion on particular paths is set forth in Section 2.7 of the Comprehensive Market Design Proposal.”

Section 2.7 of the CAISO Comprehensive Market Design Proposal, which is found in Appendix A of the July 22, 2003 MD02 Filing, states:

“133. The periodic competitive assessment will apply a Residual Supply Index (RSI) test\(^{30}\) for all effective resources that can relieve the congestion on a particular transmission path. If there are three or more suppliers that own effective resources and the RSI is greater than 1.2 for more than 95% of the time within a specified period (e.g., summer on-peak, winter off-peak), the transmission path will be declared competitive for the period. This analysis will be used to evaluate whether paths previously designated non-competitive are in fact workably competitive, and to assess whether paths previously designated competitive are in fact competitive. Following these periodic assessments the CAISO will re-designate competitive and non-competitive paths appropriately.

134. This forward assessment will be updated periodically to reflect changing market conditions, and will be reevaluated after actual market operation in each season. If the actual market outcome is not consistent with a competitive outcome, a transmission path’s competitive status will be revoked and re-designated as non-competitive.”

Footnote 30 of item 133 states:
“The RSI is equal to total supply minus the supply of the single largest supplier divided by total demand \[(\text{Total Supply} - \text{Largest Supplier})/\text{Total Demand}\]. An RSI value less than 1.0 indicates demand cannot be met absent the largest supplier (i.e. the largest supplier is pivotal and therefore has market power). Historical studies performed by the CAISO’s Department of Market Analysis have indicated a strong correlation between price-cost markups and RSI values and that there are significant price-cost markups when RSI values are below 1.2.”

While the RSI approach proposed in the CAISO’s July 2003 Filing is one potential approach for assessing the competitiveness of managing congestion across particular transmission paths, its use under a nodal pricing paradigm in a looped network model is untested. There are a number of complexities associated with applying an RSI approach in this context such as quantifying the amount of “effective supply” available for providing congestion relief, which would necessitate taking into consideration the power transfer distribution factors of individual resources and congestion constraints in other areas of the network that might limit the ability of particular resources to relieve congestion on the path in question. While such complexities may be surmountable, in the end, an RSI analysis could prove to be insufficient to serve as a stand-alone test for market competitiveness.

The following additional analysis may be necessary to adequately assess the competitiveness of particular transmission paths:

- A separate assessment of market competitiveness in both the forward and real-time markets. A path may be less competitive in real-time if certain long-start units are not committed in the forward market and, therefore, unable to compete in real-time.

- While much of the market competitiveness assessment will be based on historical analysis, it should also include a forward assessment that examines any expected changes to the transmission network and/or generation. For instance, expected retirements of certain generation units or a change in Reliability Must-Run (RMR) Unit designations may have a significant detrimental impact on the competitiveness of a particular transmission path. Conversely, the addition of new generation in certain locations may actually improve a path’s competitiveness.

More generally, the CAISO believes that it is premature at this point to commit to a specific formulaic approach for assessing whether congestion on certain congestion paths is workably competitive. There are too many unknowns about how the new market design will actually perform once implemented to pre-commit to specific methodology. The CAISO believes the prudent course is to (1) first gain experience under actual LMP for a full year of operation and (2) limit the competitive paths to the current zonal interfaces and interfaces to other pre-designated generation pockets. During this first year of operation, the CAISO will closely monitor the congestion patterns and work towards developing, through a public process, analytic methods for assessing workable competition based on actual market observations.
An initial determination of “competitive” transmission constraints in local
generation pockets will be based on an assessment of intra-zonal congestion
patterns under the current market design. Specifically, in the 12 months leading
up to implementation of LMP, the CAISO will identify intra-zonal transmission
paths that are frequently congested due to an excess of generation trying to
serve load by reviewing real-time Out-Of-Sequence (OOS) decremental energy
dispatches. Currently, the Miguel substation is the only major transmission
constraint in a local generation pocket, but this may change over time. As the
CAISO gains experience under LMP, the list of competitive transmission
constraints in local generation pockets will be reevaluated based on observed
congestion patterns.

On determination of “local transmission constraints in pre-designated local
generation pockets” the CAISO notes that “Local transmission constraints in pre-
designated local generation pockets” are those transmission paths that are
congested in generation rich areas (“pockets” of the network where generation
within such areas is competing to get out). A classic example of such a constraint
is the Miguel substation in the southern portion of the San Diego Gas & Electric
Company’s service territory. Because generation within generation pockets is
competing to get out, there should be a competitive market associated with these
transmission constraints.