

**Proposal for Energy and Reserve Optimization  
In the  
NYISO DAM and HAM**

Background:

As a result of the 5/31/2000 FERC order on Operating Reserves, the ISO was directed to consider ways of allowing greater participation by Western NY reserve suppliers in an effort to make the 10-minute reserve market more competitive.

Proposal:

The ISO has investigated SCUC and BME software modifications that would allow Western reserve suppliers to participate in meeting NYCA reserve requirements when the overall production cost of energy and ancillary services is optimized in doing so. Although this proposal does not directly provide a mechanism to “allow generation in the West to self supply by acquiring transmission capacity” as directed by FERC, the need for Market Participants to self-supply to meet locational reserve requirements is minimized under this proposal.

Specifically, the ISO would identify key transmission interfaces, and develop rules for determining reduced values of locational reserve requirements as a function of transmission margin on the key interfaces. The key interface for Eastern NY will be Central East and the key interface for Long Island will be the Con Edison-Long Island ties. SCUC and BME will determine sensitivities in overall production cost for changes in key transmission interface margin and the associated locational reserve requirement. SCUC and BME will then minimize total energy and reserve costs in the DAM and HAM subject to the transmission margin and reserve requirement constraint costs. Reserve suppliers, including those in the West, could be selected in the Day-Ahead Market (DAM) and Hour-Ahead Market (HAM) to meet the revised values of the NYCA, Eastern NY and Long Island reserve requirements.

Under normal conditions in Real-Time, transmission capacity equal to the transmission margin that existed in the HAM would be reserved by reducing the Real-Time limits associated with the key transmission limits. Reserve would be blocked off all reserve suppliers selected in the HAM as is currently done. During a Reserve Pickup event, SCD would use increased Real-Time transmission limits, without the HAM transmission margin, to allow for the delivery of “Western” reserve energy. If HAM transmission utilization is predicted to be lower than actual RT utilization, Eastern NY and Long Island zones may incur LBMP congestion costs due to HAM transmission margin reservation in Real-Time. This could result in sub-optimality in the RT LBMP energy market.

This proposal would allow “Western” reserve suppliers to be evaluated along with Eastern reserve suppliers, subject to optimizing overall system energy and reserve costs. This capability would mitigate the financial risk that Market Participants would bear by individually engaging in a self-supply option. The self supply option will require the reservation of transmission capability by scheduling as a DAM bilateral for reserve energy and result in a DAM Transmission Utilization Charge (TUC). When congestion is present across the frequently constrained key transmission interfaces, the DAM TUC would likely offset any savings in reserve costs that might have been assumed by Market Participants in a self-supply option. A summary of all the requirements for a potential self-supply mechanism appears in the ISO proposal for Self-Supply of Operating Reserves.

The “optimization” proposal as defined will require an estimated 20-24 weeks to implement in the NYISO scheduling software. The implementation of such a proposal will include the necessary software design, development, testing, and coordinated deployment in SCUC, BME, and SCD.

Advantages:

- The use of transmission capability in the optimization of energy and reserve costs would be consistent with the NYISO tariff objective to minimize energy bid production and ancillary service costs.
- The opportunity for a greater participation of Western reserve suppliers when SCUC and BME overall energy and reserve costs would be minimized.
- This proposal would mitigate the financial risk that Market Participants would bear by individually engaging in a self-supply option.

Disadvantages:

- Substantial software complexity to SCUC and BME may impact DAM and HAM posting times.
- If HAM transmission utilization is predicted to be lower than actual RT utilization, Eastern NY and Long Island zones may incur LBMP congestion costs due to HAM transmission margin reservation in RT. This could result in sub-optimality in the RT LBMP energy market.