

# **NYISO TCC Revenue Shortfall Proposal**

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**Prepared for**

**Business Issues Committee**

**Agenda #11**

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The NYISO proposal is an integrated approach to address several issues related to the settlement process for TCCs. It consists of four related elements:

1. “Make Whole Approach” to determine charges to TOs for costs attributable to facility outages.
2. Application of Make Whole Approach to determine revenues to TOs for facilities placed back in service.
3. New flow-based method to allocate residual auction revenues to TOs.
4. Modified method to allocate residual congestion rents from DAM settlements to TOs.

1. Under the Make Whole Approach, a shortfall cost is calculated for each facility outage modeled in the DAM or in a TCC auction, and charged to the TO that owns the facility.
2. Conversely, for facilities that were modeled as out of service in monthly auctions and subsequently returned to service in the DAM, a share of the DAM congestion rent revenue attributable to that facility is calculated and paid to the TO that owns the facility.

- The same approach will be used to attribute a share of the monthly reconfiguration auction residual revenue to facilities that are modeled as out of service in the capability period auction, but subsequently returned to service in the monthly reconfiguration auction.
3. A flow-based method will allocate residual auction revenue accruing in the capability period auctions and monthly reconfiguration auctions.
- This differs from the IMWM method in that revenue is allocated to all facilities on a flow basis, not just to facilities that contribute to the NYISO's closed transmission interfaces.

- The flow-based method also allocates to the TOs, in a separate step, the congestion rent shortfalls and revenues that have been directly assigned using the Make Whole Approach in the TCC reconfiguration and capability period auctions.
  - If a facility is out in the auction, the shortfall cost that the TO pays is allocated to all TOs using the flow-based method.
  - Conversely, if a facility is returned to service in the reconfiguration auction, the allocation of revenue the TO receives will be charged to the TOs using the flow-based method.

4. The monthly residual congestion rent shortfalls/surpluses for the DAM will be allocated using a modification of the current methodology.
  - Revised calculation of the allocation factors to include the imputed value of all outstanding TCCs and Grandfathered ETAs for the month.

## 1. OUTAGES

## Make Whole Approach

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The Make Whole Approach is a reworking and simplification of the concepts introduced in January 2003 by LECG. It is used to assign congestion rent costs to facilities that are out of service in the:

- DAM
- Reconfiguration auction
- Capability period auction

# 1. OUTAGES

## Shortfall in DAM

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These steps describe the methodology to calculate the shortfall costs arising from facility outages in an hour of the DAM:

1. Identify binding constraints in an hour of the DAM (i.e., positive shadow price).
2. Calculate flows on each binding constraint for DAM schedules for that hour based on actual grid model.
3. Calculate flows on each binding constraint imposing the set of outstanding TCCs (and grandfathered rights) on the DAM grid model.
4. Subtract (3) from (2) to determine if scheduled flow is less than that for outstanding TCCs. If so, there is a congestion rent shortfall for that constraint.
5. Calculate shortfall cost by multiplying the MW amount of overload by the DAM shadow price of the constraint.



## 1. OUTAGES

## Shortfall in DAM

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Once the congestion rent shortfall has been calculated for each binding constraint, it will be allocated to the TOs with facilities out of service. NYISO staff will construct a table showing a mapping between binding constraints and transmission outages.

- If none of the constraints associated with a particular outage are binding in the DAM, no shortfall cost will be charged for the outage.
- A TO will be charged the shortfall costs for each constraint for which it is the sole owner with one or more facilities out of service affecting that constraint.
- If one or more TOs have outages that correspond to the same constraint, they will be allocated the costs in proportion to the overloads that each outage causes individually.

## **2. FACILITY BACK IN SERVICE**

## **Surplus in DAM**

The Make Whole Approach is also used to determine the revenue that will be assigned to a TO whose facility is placed back in service in the DAM, in a manner similar to that of calculating the shortfall:

1. Identify constraints binding in an hour of the DAM.
2. Calculate flows on each constraint for the DAM schedules based on actual grid model.
3. Calculate flows on each binding constraint imposing set of outstanding TCCs (and grandfathered rights) on the DAM grid model.
4. Subtract (3) from (2) to determine if scheduled flow is greater than that for outstanding TCCs. If so, there are excess congestion rents for that constraint.
5. Calculate revenue surplus by multiplying the MW amount of additional flows by the DAM shadow price of the constraint.

## **2. FACILITY BACK IN SERVICE**

## **Surplus in DAM**

Once the surplus has been calculated for each binding constraint, it will be allocated to the TOs with facilities placed back in service. NYISO staff will construct a table showing a mapping between binding constraints and transmission outages. These constraints are therefore relieved when the facility comes back in service.

- A TO will be allocated the surplus for each constraint for which it is the sole owner with one or more facilities back in service affecting that constraint.
- If one or more TOs have multiple facilities back in service that correspond to the same constraint, they will be allocated the surplus in proportion to the effect on flows that each facility coming back in service has individually.

### 3. FLOW-BASED ALLOCATION

The NYISO has developed a method to assign each facility within the NYCA a flow-based value derived from the market-clearing prices and MW flows associated with the TCCs sold in an auction.

- Summing these flow-based values over all facilities owned by a TO provides a total flow-based value for that TO.
  - The difference between the MW flows over a facility after the auction and the MW flows prior to the auction (the “Initial Condition,” or the MW flows stemming from all unexpired TCCs and grandfathered rights) will be calculated.
  - This difference, multiplied by the difference in nodal prices over each facility from the auction, will be the value assigned to that facility.
- The flow-based values will be used to develop allocation factors to distribute the residual revenue from an auction.

This is analogous to the process used to unbundle TCC awards at the end of an auction.

### **3. FLOW-BASED ALLOCATION**

The Make Whole Approach assigns a cost to each TO whose facility, when placed out of service in a reconfiguration or capability period auction, causes a revenue shortfall. When the revenue from this Make Whole charge is included, the TCC residual revenue from the auction should be positive.

- The proposed allocation of the revenue from these directly assigned costs is based on the difference in the flow-based value from the actual monthly auction and from a “but for” monthly auction, which assumes that all lines are in service that were in service in the prior auction.
- The difference in the flow-based value for each TO determines a set of weights to distribute the directly assigned costs of transmission outages.
- This method compensates these TOs that received less money from the auction due to a facility outage.

**3. FLOW-BASED ALLOCATION**

The Make Whole Approach also pays for facilities returned to service in a reconfiguration auction that were modeled as out of service in the prior capability period auction.

- TOs will receive less revenue from the monthly auction because some of the auction revenue will be paid to the TO that returns a facility to service.
- The proposed allocation is based on the difference in the flow-based value from the actual monthly auction and from a “but for” monthly auction, which assumes that all lines are in service.
- The difference in the flow-based value for each TO determines a set of weights to distribute the directly assigned revenue paid for transmission returning to service.

## **4. ALLOCATION OF DAM RESIDUAL**

The fourth element of the NYISO proposal is to modify the method for allocating the DAM residual congestion rent shortfall/surplus to the TOs. This will replace the current IMWM percentage allocation factors.

- DAM residual congestion rents will include adjustments for the direct allocation of shortfalls and revenues to specific facilities.
  - Revenue received by NYISO for charging a shortfall cost will be added to DAM residual congestion rents.
  - Revenue the NYISO pays to a TO for a facility returning to service will reduce DAM residual congestion rents.

## **4. ALLOCATION OF DAM RESIDUAL**

The allocation factors for the monthly shortfalls/surpluses will be calculated from the imputed revenue that each TO receives for TCCs and Grandfathered ETAs for that month. Imputed revenue is based on:

- Revenues received from TCC auctions for which the TCCs remain valid in the present month.
- Revenues received for ETCNL and Residual TCCs.
- Imputed value of Grandfathered TCCs and ETAs for which the agreements remain valid in the present month.



The advantages of the NYISO proposal include:

- Improves allocation of congestion rent costs from facility outages.
- Maintains full funding of TCCs.
- Uses consistent methodology (Make Whole Approach) to attribute costs to facilities out of service, and revenues to facilities returning to service, in the DAM and TCC auctions.
- Improves the allocation of revenues from TCC auctions relative to the IMWM currently used.
- Addresses MP concerns that intra-zonal facilities are not treated consistently in the Feb. '03 Management Committee proposal.
- Can be implemented on approximately the same timetable as the National Grid proposal.