Balance-of-Period TCC Auction

Proposed Credit Policy

Sheri Prevratil

Manager, Corporate Credit

New York Independent System Operator

Credit Policy Working Group

April 27, 2015

DRAFT – FOR DISCUSSION PURPOSES ONLY

Background

- At the August 4, 2010 Business Issues Committee Market Participants approved the Balance-of-Period TCC Auction Market Design.
  - *The motion passed unanimously with abstentions.*
- In short, Balance-of-Period TCC Auctions will allow Market Participants to buy and sell TCCs for:
  - *The remainder of the current Capability Period.*
  - *Any future month or combination of months in the current Capability Period*
  - *Any future month or combination of months in the next Capability Period when bought or sold during the Balance-of-Period Auction conducted in the last month of the current Capability Period (i.e. TCCs bought or sold in April for May through October).*

Background

- Credit requirements were being developed during 2010 and 2011 to support both Centralized Multi-Duration and Balance-of-Period TCC Auctions.

- In October 2011 the NYISO proposed a phased approach for the delivery of the Multi-Duration Centralized TCC Auction Project due to certain complexities which increased the scope.
  - *Credit policy was developed for Non-Historic Fixed Price TCCs including annual payments for all awarded Two-Year TCCs as part of the first phase.*
  - *Both Multi-Duration Centralized Auction and Balance-of-Period Auction credit policy development associated with later project phases was deferred.*

- During the 2015 project prioritization process Market Participants agreed to support the Balance-of-Period TCC Auctions.
  - *CMS functional requirements due in Q4 2015.*
  - *Credit policy needed to meet project timeline.*

Proposed Credit Policy Assumptions

- Balance-of-Period TCCs will be purchased based on the Market Clearing Price for that TCC.

- Balance-of-Period TCCs are monthly TCCs purchased in a Balance-of-Period TCC Auction and will be paid for upon completion of the Balance-of-Period Auction in which they were purchased.

Proposed Credit Policy

- The Balance-of-Period TCC credit policy will be made up of two components.
  - *Current month credit requirement*
    - Credit requirements for current month TCCs involve updating the current design to take account of the additional data on TCC outcomes that has become available since the current rules were developed in early 2006.
  - *Future month credit requirement*
    - The Balance-of-Period Auction credit requirements reflect the need for a fundamental extension of the current TCC collateral design to define credit requirements for future month TCCs.
- In addition, implementation of the Balance-of-Period TCC credit policy will require development of credit requirements covering the second six months of a year long TCC.

Current Month Analysis

- Development and analysis of updated monthly credit coverage formulas utilizes data from June 2000 through December 2010 and from January 2011 through July 2014.

- Current month margins will cover the variability of payments due to the NYISO in the current month based on Day-Ahead Market prices.
  - *Assessed using historical NYISO data for monthly TCC auction prices and monthly TCC payment data.*

Current Month Analysis

- In 2011 a TCC level statistical analysis was performed to assess the relationship between the variability of payments due on monthly TCCs and TCC characteristics such as auction price and month covered.

- Statistical models were evaluated to determine which models yielded formulas that could be used to specify credit coverage margins and were examined to see how they performed at the TCC level.
  - *Analyzed the amount of credit coverage and uncovered payments due when applied to monthly TCC settlements.*

Current Month Analysis

- The NYISO resumed development of the Balance-of-Period credit policy in the latter part of 2014.

- Performance of the credit coverage formulas were compared to each other and with the current formulas.
  - *Utilized both data on monthly TCC outcomes through December 2010 and more recent data from January 2011 through July 2014.*
    - Utilizing data from January 2011 through July 2014 allowed the NYISO to:
      - Assess how well the previously developed formulas would have performed and
      - Assess the stability of their performance over time.

Current Month Analysis

- The performance of the credit coverage formulas at the portfolio level was evaluated to determine if there were any unexpected correlations that may cause the formulas that performed well at the TCC level to not perform as well at the portfolio level.
  - *Comparisons showed that the alternative credit coverage rules would have required materially less collateral while reducing uncovered payments due for both the February 2005 through December 2010 period and the January 2011 through the July 2014 period.*
  - *The potential for using separate intra-J, intra-K, and neither-JK formulas in place of a single non-JK formula was examined, however separate formulas that clearly performed materially better than the improved non-JK formula were not identified.*

Current Month Summary

- Under the proposed Balance-of-Period Auction collateral design, credit coverage for the current month of a TCC purchased as a six month or annual TCC will be determined by the current month TCC formula.

- While the current monthly formula includes distinct credit coverage margin formulas for each month, the proposed formulas will initially be the same for all months.
  - *The CMS will maintain the capability to implement distinct monthly formulas to allow changes to be made based on experience with Balance-of-Period Auctions.*

- The monthly credit coverage formula will include distinct credit coverage margin formulas for Zone J, Zone K and Non-JK.
  - *The CMS will have the capability to implement distinct formulas for Intra-J, Intra-K and Neither-JK TCCs to allow changes to be made based on experience with Balance-of-Period Auctions.*

Future Month Credit Requirement

- TCCs covering future months of the current Capability Period will be marked-to-market every month based on the prices in the Balance-of-Period TCC Auction.
  - *Collateral requirements will be adjusted based on those prices.*

- Market Participants will have the opportunity to purchase and/or sell any future month of the current Capability Period and as such, the NYISO will need to establish credit coverage for two types of future month TCCs.
  - *The future months comprising the remainder of a capability period, to cover the remaining months of a six month TCC.*
    - If a Market Participant purchased a six month TCC in spring 2015, in mid May 2015, the NYISO would require credit coverage for the current month (May) and for the remainder of the Capability Period (June through October).
  - *TCCs covering individual future months.*
    - Market Participants might purchase TCCs covering the month of July in the May Balance-of-Period Auction and have no other TCC holdings in other months.

Future Month Credit Requirement

- The Balance-of-Period credit policy has been designed to establish a distinct collateral requirement for each month of six month TCCs, rather than based on a collateral requirement for the remainder of the period.

- With this design, the sale of a TCC covering one month of the remaining duration of a six month TCC will automatically lead to a credit adjustment for that sale.

Future Month Analysis

- Given that the NYISO has never run Balance-of-Period Auctions, there is no historical New York data to show how the prices of future month TCCs would move from month to month.

- Balance-of-Period data since 2006 is available from PJM.
  - *The NYISO has used PJM Balance-of-Period Auction data to estimate the likely variability of NYISO Balance-of-Period prices. This assessment is based on the following assumption:*
    - The ratio of the month to month variations in future FTR prices in PJM to the similar ratio in New York will be similar to the ratio of the variability of current month TCC payments between the two regions.
    - This is considered an appropriate method for assessing the potential variability of NYISO Balance-of-Period prices.

Future Month Analysis

- The proposed credit policy for future month TCCs will initially use the historical PJM data to define credit requirements for future month TCCs.

- As NYISO data becomes available following implementation of the Balance-of-Period Auction, the NYISO will use a combination of historical NYISO TCC and PJM FTR data to define credit requirements for future month TCCs.

Future Month Analysis

- The proposed methodology for calculating the credit requirement for future month TCCs is based on individual monthly credit coverage margins for each future month of the Capability Period for which a TCC is held.
  - *Margins will be calculated by multiplying the monthly credit requirement for the TCCs held for that month by an index ratio.*
    - The index ratio measures the ratio of the variability of PJM future month FTR auction prices to the variability of future month TCC payments.
    - The index ratio would be applied to the current month credit margin as calculated for a given monthly TCC price.
    - The index ratio will set the collateral requirement for a future month TCC as a specified fraction of the margin for the corresponding current month TCC.
    - The index ratios the NYISO has developed are all less than 1.
      - There will be less collateral on future month TCCs than on a current month TCC with the same source, sink and auction price.
      - This reflects the fact that the month to month variability of TCC prices in PJM is much less than the variability between auction price and payments due.

Future Month Analysis

- The index ratios would be recalculated periodically using a combination of historical PJM Balance-of-Period Auction data and, as NYISO data becomes available, NYISO Balance-of-Period Auction data.
  - *Data used to calculate the index ratios would initially consist exclusively of historical PJM data.*
  - *The NYISO plans to periodically update the index ratios with NYISO Balance-of-Period Auction data until such time the index ratios are defined based solely on NYISO data.*
    - The NYISO continues to evaluate the best approach to add NYISO data to develop the index ratios.

Future Month Analysis

- Distinct index ratios will be used for each month.
  - *Index ratios were developed using data for summer, winter and shoulder months, respectively.*
    - Summer months are considered May, June, July and August.
    - Winter months are considered December, January and February.
    - Shoulder months are considered March, April, September, October and November.

Portfolio Level Adjustment Analysis

- The intended effect of portfolio level adjustments is to both reduce collateral held and reduce uncovered payments.

- Portfolio level adjustments to the holding requirement for monthly TCCs (current and future) were developed in 2011 but were not presented to stakeholders because of the deferral of Balance-of-Period Auction implementation.
  - *Adjustment based on measures of portfolio diversification rather than individual TCC characteristics.*
    - The adjustments that have been developed potentially increase the collateral requirement for undiversified portfolios.
    - Adjustments that would reduce the collateral requirement for highly diversified portfolios have been examined but the NYISO has not yet identified reliable rules for such adjustments.

Portfolio Level Adjustment Analysis

- The proposed portfolio level adjustment seeks to apply higher credit requirements to TCC portfolios that are more concentrated in the constraints that they would create flows over.
  - *There is more exposure to common changes in congestion patterns and payments due.*
  - *Requires a method of measuring concentration in constraint exposure of a TCC portfolio.*
    - Grouped the TCCs in the portfolio based on whether the TCCs have the same zonal (or super zonal) sources and sinks.
      - Geographic concentration
    - Adjustments are based on the value of an HHI index of portfolio concentration measured both for the number of TCCs and TCC market value.
      - The HHI is a well established measure of concentration.
      - NYISO Market Participants should be familiar with its use in market power analysis.

Next Steps

- Provide data, additional analysis and proposed formulas.
- Address any Market Participant feedback received at April CPWG.
- Send comments or suggestions related to the proposed credit policy framework to sprevratil@nyiso.com

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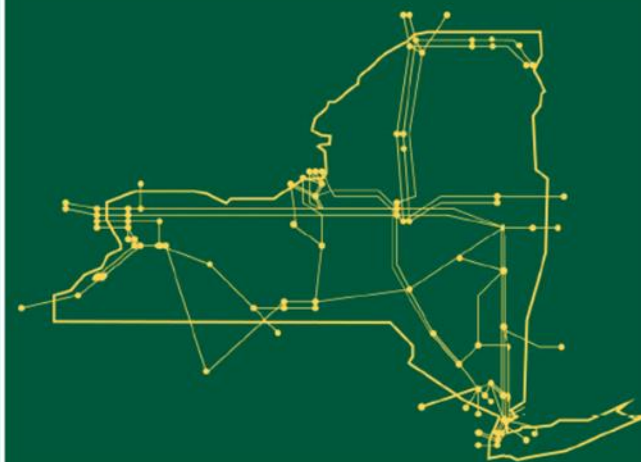

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