

Miscellaneous Solution Details

Andrew Levitt Market Design and Economics August 12, 2020 PJM CCSTF



- Two classes with significant interactions and different aggregate sizes could produce unexpected ELCC results.
- The proposed 200-CP based Performance Adjustment precisely accounts for the significant differences between fixed solar and tracking solar.
- Therefore, PJM proposes a single solar class to cover both fixed and tracking solar.



Validating ELCC Model Parameters

- The ELCC model uses certain parameters for modeling dispatch of limited duration resources (including Energy Storage Resources) and combination resources (including hydro with non-pumped storage and hybrids). For such resources, PJM proposes this rule:
- "If PJM observes that ELCC modeling parameters are inconsistent with observed conditions (such as MWh output), PJM will reassess the parameter levels that are appropriate for use in the ELCC model."



- "Limited duration resources (including Capacity Storage Resources) and combination resources (including hydro with non-pumped storage and hybrids) that intend to participate in the a given auction should provide PJM with all applicable modeling parameters and supporting documentation no later than November 1 preceding the auction in order to support development of ELCC results."
- "Intermittent Resources that are providing their own backcasts rather than using backcasts developed by PJM should provide those backcasts by November 1 preceding the auction."



- Official ClassELCC% results will be released in December of each year for application in the following delivery year and in auctions run in the following calendar year.
- Design Component 4 Soln A
 - Add: "ClassELCC% results for use in the upcoming Base Residual Auction and three Incremental Auctions (i.e., for t+0 years through t+3 years) will model resources expected to offer into the auction based on the higher of vendor forecast and the projection for the DY based all available auction data for the DY."



Specification of the "Delta Method" for Allocating ClassELCCMW

- Design Component 4
 - "If feasible, ELCCMW will be allocated to each class from the PortfolioELCCMW using the E3 "Delta Method" as applied using an incremental representative of each class. If the Delta Method is not feasible, then ELCCMW will be allocated to each class on the basis of the average of the "First In" ELCC and the "Last In" ELCC, where "First-In ELCC" is the incremental ELCC of each class in its entirety in a portfolio with no other intermittent resources or limited duration resources, and "Last-In ELCC" is the incremental ELCC of each class in its entirety in the context of the full portfolio."



Methodology for Small Classes

"In case ELCC results for a class show irreproducible, inconsistent, or ulletotherwise unreasonable results due to the small size of the class, PJM will use engineering judgement to combine that class with another class or classes with similar characteristics for the purposes of calculating a single MultiClassELCCMW. PJM will then reallocate those MW to the constituent classes based on the average of their modeled output during the highest risk hours of the "First In" case and the "Last In" case, consistent with the principles of class allocation reflected elsewhere in the ELCC model. In case such an adjustment is needed, PJM will notify stakeholders prior to release of final results."



Jpjm

Facilitator: Melissa Pilong, Melissa.Pilong@pjm.com

Secretary: Jaclynn Lukach, Jaclynn.Lukach@pjm.com

SME/Presenter: Andrew Levitt, Andrew.Levitt@pjm.com

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Member Hotline (610) 666 – 8980 (866) 400 – 8980 custsvc@pjm.com