Exelon ORDC Feedback

PJM Market Implementation Committee

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Forward Energy & Ancillary Services Offset Principles

- PJM must meet the FERC-mandated implementation deadlines

- The forward E&AS calculation method should be transparent and replicable
  - Due to the forward nature of the calculation certain components may require modeling to obtain reasonable forward estimation
    - Such modeling should use generally accepted methods
    - PJM should publish the model and inputs (including data sets) to enable replication

- The E&AS offset should be accurate, providing a reasonable expectation of market revenues

- Forward inputs should be used whenever feasible

- Market-based inputs should be used whenever feasible

- The forward E&AS calculation should be consistent with the DA/RT dispatch of the subject unit
  - Forward power and gas values must be in terms consistent with daily dispatch, if possible
  - Price variability relative to the index values should be modeled (e.g., hourly shape)
  - Unit dispatch optionality should be modeled (e.g., measure extrinsic value)

Forward E&AS Offset – Compliance Objectives

Overview

PJM should develop a forward E&AS estimation that employs a forward average of energy and gas values derived from publicly-available indices (e.g., ICE, NYMEX, Platt's), adjusted for basis from the closest liquid trading hub to the relevant unit bus, with application of historic hourly shape to the monthly index values, and using peak-hour dispatch. To meet the compliance timeline, PJM should reserve more detailed forward estimates of hourly shape and extrinsic value for future consideration.

- INDEX – Derive Forward EAS from the most liquid, publicly-available index of power and gas prices
- INDEX WINDOW - To avoid capture of anomalous trading, average the published index value for the relevant commodity and delivery year each day for six months prior to the E&AS posting date
- LIQUID HUB – Measure forward values at closest liquid trading hub to the resource in question
- POWER BASIS – Estimate forward congestion using the most recent FTR values from the closest liquid regional trading hub (WHUB, ADHUB, or NIHUB) to the resource in question. Use historic losses (which do not vary materially).
- GAS BASIS – Use forward gas basis for relevant trading hubs
- HOURLY SHAPE – Use historic shape, but subsequently evolve to a forward estimate
- VOLATILITY/EXTRINSIC VALUE – For timeliness, no measure of extrinsic value in this iteration, but subsequently develop a forward estimate
- DISPATCH ASSUMPTION – Maintain the current OATT-mandated Peak Hour Dispatch method

Forward E&AS Offset – Development Objectives

Overview

PJM should develop a forward E&AS estimation that employs a forward average of energy and gas values derived from publicly-available indices (e.g., ICE, NYMEX, Platt's), adjusted for basis from the closest liquid trading hub to the relevant unit bus, with application of historic hourly shape to the monthly index values, and using peak-hour dispatch. *PJM should consider methods to refine the forward estimation of hourly shape and volatility in conjunction with the 2022 quadrennial review.*

Exelon suggests the following for inclusion with PJM's compliance filing

PJM commits to consider refinement of the Forward E&AS method with stakeholders in concert with the next quadrennial review.

The detailed discussion will include:

- *Assessing the appropriate reference unit technology; define the unit characteristic and costs*
- *Assessing the forward index for power and gas using available forward indices*
- *Assessing power and gas hubs associated with load zones*
- *Determining an appropriate methodology for averaging the forward prices*
- *Assessing use of FTR auction results as a market-based, forward basis estimate from trading hub to load zone/unit bar*
- *Consider developing an extrinsic value for the subject unit resource using either a Monte Carlo simulation or a closed form deterministic model*

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