E&AS Revenue Offset Proposal

MIC Special Session – Reserve Price Formation Order

June 17, 2020

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FERC Order

"Therefore, we order PJM to make a compliance filing within 45 days of the date of this order proposing modifications to its Tariff to implement a forward-looking E&AS Offset that reasonably estimates expected future energy and ancillary services revenues for all Tariff provisions that rely on a determination of the E&AS Offset (e.g., Net CONE)."

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Polling on Considerations for Forward-Looking E&AS Offset Methodology

Which of these objectives do you prioritize most highly?

- Accuracy (reasonable expectation of actual revenues)
- Volatility (variation between years)
- Resource flexibility (useful for many resources)
- Transparency (can be determined independently)
- Sensitivity (to model or dispatch criteria)
- Timely (meet filing timeline)
- Other

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Leading Alternatives

	Spark Ratio (Heat Rate) Scaling	Input Scalar
Method Overview	*Scale the outputs:* Scale the historical net E&AS revenues using ratio of monthly forward heat rate (LMP / Gas prices) to historic monthly heat rate. Monthly forward prices are directly applied to hourly historical net E&AS revenues to produce forward-looking offset. No decomposition of monthly forwards.	*Scale the inputs:* Monthly LMP and gas forwards are decomposed to hourly (or daily) values using scalars representing the historical hourly (or daily) volatility of prices. These adjusted prices are used in a dispatch to project energy revenues.
Treatment of New Resources	Simulated dispatch is performed for the reference resource for each asset class historical net revenues (status quo).	Simulated dispatch is performed for the reference resource for each asset class.
Treatment of Existing Resources	Actual historical net revenues are used. No simulation needed.	Same as for new resources - simulated dispatch must be performed for each existing resource to determine forward net revenues.
Pros / Cons	Relatively straightforward; reproducible in a spreadsheet for many resources; But, dispatch is not updated to reflect forward LMPs; seen as less precise	Dispatch is reflective of projected LMPs; but this method is more time-intensive; less transparent – particularly for existing resources

Feedback

- Limited interest in methodologies that scale historical offsets
- Concern historical may miss market dynamics
- Support for methodology based on forward prices
- Do not let perfect be the enemy of the good
- Timely and wrong is not good
- Accuracy is critical
- Desire for granularity
- Concern with liquidity of forwards

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Proposal – Input Scalar

- Forward energy prices
  - Western Hub forward prices from Platts
  - Calculated at bus level
  - Historical hourly price spread
- Forward gas prices
  - Henry Hub forward prices from Platts
  - Calculated at locational level
  - Historical hourly price spread

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Proposal – Input Scalar

- Reference CT based on 2018 Quadrennial Review
- Peak-hour dispatch or Optimal dispatch*
- Exploring simple method to incorporate regulation and reserve revenues
  - Forward prices are not available for regulation and reserves
  - Project regulation and reserve revenues based on proportion of historical regulation and reserve revenues to historical energy revenues

Forward energy revenues * (historical regulation and reserve revenues / historical energy revenues)

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Dispatch Methodology:

- Peak-Hour Dispatch
  - Calculate the Energy and Ancillary Services Revenue Offset under Tariff, Attachment DD, section 5
  - Reference Resource is committed Day-ahead Energy Market
  - Four distinct blocks of four hours of continuous output each
  - Hour ending 0800 EPT through to hour ending 2300 EPT
- Optimal Dispatch
  - Run any hour when economic

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Subjective Questions

- Date of forwards for energy and gas?
- Period of forwards?
  - Delivery year vs. calendar year
- Use of cost-based offers or price-based offers to calculate net revenues?
- Location(s) of reference resources?
  - CONE areas
  - Zones
- Locational Basis differential used for existing resources?
  - Hub, Zone, Bus
  - Use more locationally specific hubs
- Others?

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