Adjusted Production Cost as Allocation Metric

Cross Border
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Background

Costs are to be allocated based on the proportion of savings realized from the development of a Project.

Savings can be determined by one or a combination of metrics that measure those savings:

- Adjusted Production Cost
- Load LMP
- Gen LMP

Focus on Adjusted Production Cost as the Metric for allocating cost between PJM and MISO for Projects in one RTO that demonstrate a benefit in the other RTO.
Proposed Allocation Metric

- Adjusted Production Cost captures the impacts on each pool for the purchase and sales transactions outside of the pool (hourly)

\[
\text{Adj PC} = \text{Production costs} + \text{Purchases @ Zone Load Weighted LMP} - \text{Sales @ Zone Generation Weighted LMP}
\]

Load Zonal LMP = \[
\frac{\sum_{n=1}^{n} (\text{Bus Load}_n \times \text{Bus LMP}_n)}{\text{Total Zonal Load}}
\]

Generator Zonal LMP = \[
\frac{\sum_{m=1}^{n} (\text{Generation}_m \times \text{Generator Bus LMP}_m)}{\text{Total Zonal Generation}}
\]
Allocation Process

- Intent is to determine the operational savings associated with a transmission project.
- Operational savings are derived from a base case without the project compared to a change case with the project included.
- Operational savings are based on the difference in the adjusted production costs between the base and change cases.
- Determine savings over multiple years.
- Determine split the savings ratio.
Issue – Common Generators

Two concepts to consider for allocating the benefits of generators in one RTO that provide direct support to the other RTO:

- Capacity allocation is used; or
- Generator ownership is used to distribute inter-RTO adjusted production costs.
Approach 1 - Capacity Status Determines Where Savings are Allocated

- Operational savings for generation in one RTO providing capacity support in the other RTO and known to be non-recallable would be assigned to the RTO paying for capacity.

- Require supplementing existing data gathering processes to specifically determine what MISO generation is assigned to PJM for capacity credit and the PJM generation assigned as designated Network Resources in MISO.

- Adjustments for resource designation:
  - Can be made for current year, but time consuming
  - Changes year to year, not currently possible in MISO. PJM?
  - Provide marginal benefit?
Approach 2 - Generation Ownership Determines where Savings are Allocated

- Unit ownership determines where the costs are allocated
  - Units or portions of units owned by MISO participants are allocated to MISO
  - Units or portions of units owned by PJM participants are allocated to PJM
  - Is easy to implement for multi-year analyses
Allocation Method for Cross Border Assignment

- Project cost allocation is made to each RTO based on each RTO’s share of Production Cost Savings associated with each Project
  - Based on PROMOD and MAPS
  - Allocation Approach 1 or Approach 2

- Cost allocation within each RTO is based on the allocation process being defined within the RTO’s.
  - RECB
  - Regional Planning Process Working Group (RPPWG)
Adjusted Production Cost as Metric

- Can be performed by each RTO using PROMOD and MAPS
  - Leverages off of the coordinated work performed for the JCM study
- Provides a good metric for where the gross level of savings are accruing
- Need to determine how to model generation in one RTO that is providing non-recallable capacity support to the other RTO
  - Capacity; or
  - Ownership