But First – a disclaimer

• *This presentation should not be considered a recommendation for EIM bidding strategy.*

• The context of this presentation assumes:
  ▪ Hourly load conforms to your base schedule
  ▪ EIM resource characteristics currently in place
  ▪ No congestion
  ▪ No Bid Cost Recovery (BCR)
  ▪ “Load” includes transactions that are scheduled ahead of time (Bilateral trades, etc…)
  ▪ Only energy costs – does not address commitment cost bidding
EIM is an Incremental Market

- You are settled against the plan of the “base schedule”
  - Generation transactions only occur for deviations from the plan to meet your load
  - Generators are paid the LMP prices for the MW generated above your plan
  - Generators are charged the LMP prices for the MW decremented below your plan*
- Bids should be made on an incremental basis, not an average “all in” cost

* Assuming load is to plan

Example: A 300 MW base schedule is not settled for the entire 300 MW. It is only settled for the incremental MWH that are above and/or below 300 MW during the hour.
Cost Basis “Incentive”

The EIM is structured to encourage bidding resources very close to actual cost/value for a range around the base schedule.

**EXAMPLE:**

GridRUS has a participating resource that is base scheduled at 300 MW. The true incremental cost of the previous and next 20 MW (281 MW to 320 MW) is approximately $25/MW.
Example: Bid Price & Dispatch

GridRUS submits an energy bid of $25 / MW for +/- 20 MW around base schedule of 300 MW.

The unit will move such that:

Sales will be made at LMP > $25, and purchases will be made at LMPs < $25.

GridRUS kept whole to costs.
Bids are not only used to stack resources for native load, but also used for a sale (or purchase) from a neighboring EIM member.
Example: Cost Bidding Incentive

One day a GridRUS Trader decides to Bid 30$ instead of the $25 cost for the same range, trying to improve off system sales margin

- RISKY! The LMP goes to 28$, and the unit is moved down to 280 MW.
- The market now believes it is optimizing by shutting down the higher cost power (30$) and selling “cheaper” (28) resources to GridRUS.
- This results in $25 cost power being replaced with $28 power. This increases costs 3$ / MWH above the actual cost GridRUS would have normally incurred to meet its own load.

Moral:
Inflating costs to improve margin may backfire.

Bidding near costs ensures lowest cost optimization of the native load system.
Bids and the Base Schedule / Load Forecast work hand in hand in the EIM
Base Schedule and Loads

• The Base Schedule is an hourly look at loads
• Even if no off system EIM transfers are occurring, a participating resource may be under or over its base schedule within the hour
  ▪ Base Schedule is a single point in the hour
  ▪ There may also be load forecast error
  ▪ Other resources are not operating to base schedule (e.g. wind, reliability)

*Bidding range gives flexibility to economically optimize for native load intra-hour*
EIM market is designed to encourage bidding around the base schedule very close to cost.
Summary

• A participating unit can be under or over its base schedule at any given time. To ensure best optimization for native load, bidding near cost is encouraged by market design.

• The EIM optimizes all participants at the same time, so intra-hour cost based margins are shared and spread across the footprint, resulting in economies of scale at cost.

• Graduated bidding strategies above and below base schedule range may offer some additional margin for EIM transfers.
Questions?