



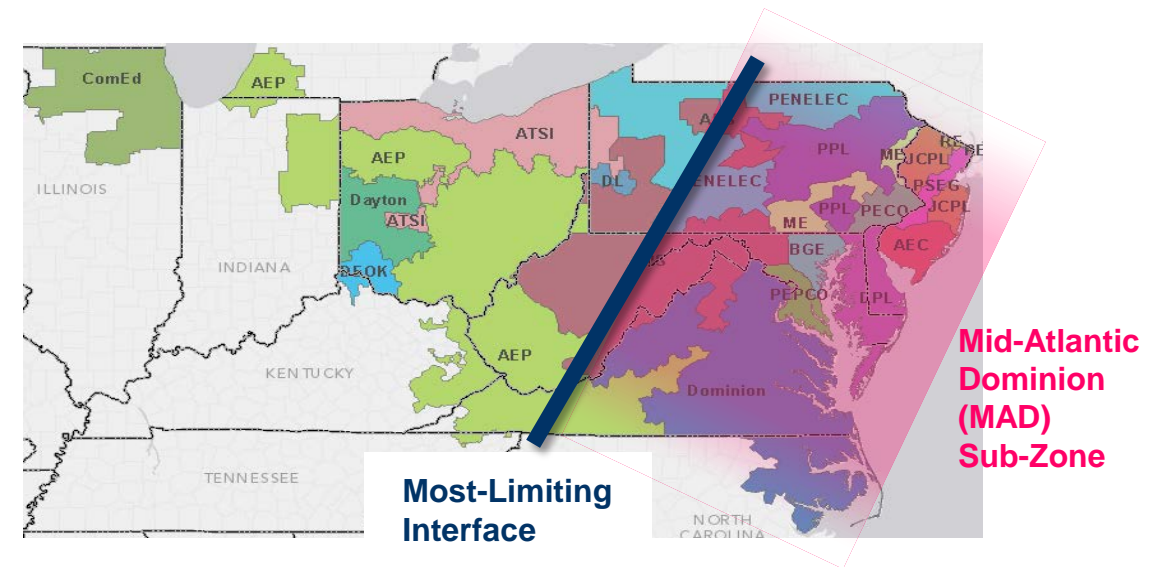
# Reserve Zone & Synchronized Reserve Market Proposal Overview

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- The proposal herein represents a starting point for discussion within the stakeholder process. It should not be construed as a final proposal.
- Additional details can be found on the "Options Matrix – Reserves" tab in the CBIR matrix.

# Suggested Reserve Zone Modeling Change

- Keep existing RTO reserve zone with closed loop sub-zone structure, but allow flexibility to change the location of the sub-zone
- Define several reserve sub-zones, of which only one will be used at a time
  - Likely reserve sub-zones =
    - Mid-Atlantic Dominion to capture West/East constraints & an additional reserve sub-zone to capture North/South constraints
    - Perhaps others based on additional analysis



- Reserve sub-zone to be used for a given operating day will be defined on a day-ahead basis and will apply for the entire operating day.
  - Notification of the reserve sub-zone to be modeled each day will be made on a day-ahead basis (method TBD).
- Changes to the reserve sub-zone in use can be made mid-day on an exception basis.
  - Stakeholders will be notified of all mid-day switches in the modeled reserve sub-zone as soon as possible (method TBD).
- Reserve sub-zone definitions will be published quarterly in advance of the network model builds.

- Consolidate Tier 1 and Tier 2 reserves into a single product that is equally:
  - Obligated to provide reserves during a synchronized reserve event
  - Compensated, regardless of the occurrence of a synchronized reserve event
  - Subject to consequences for non-performance

## PJM proposes to simplify the offer structure for synchronized reserve

- Availability – in general, assume resources available for energy are available for reserves
  - Non-capacity resources may change their availability if desired
- Remove offer MW – synch reserve capability (MW) will be automatically calculated based on energy offer parameters
  - Discontinue use of Spin Ramp Rate – use segmented energy ramp rate instead
  - Discontinue use of Synch Reserve Maximum, except where less than Eco Max
- Remove synchronized reserve offer price
  - Base resource cost on lost opportunity cost (LOC) and cost of energy consumption for condensing (if applicable)
    - Unloaded generation (Tier 1) continues to be \$0 cost since it does not incur LOC
  - Treatment for demand response and energy storage require further discussion

- No change to eligibility criteria
- Synch reserve MW will not be assigned to resource classes that cannot typically reliably provide synchronized reserve (status quo)
  - Solar, wind, nuclear, energy storage, and hydro resources
  - Specific units may request inclusion if they indicate and demonstrate an ability to provide reserves
- Energy Storage participation model requires additional discussion based on FERC Order 841