PJM Proposed Goals

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April 18, 2018
Solutions PJM Has Been Working On

**Short-Term (Q3 2018):**
- Synchronized Reserve (SR) Market
  - Consolidation
  - Accuracy
  - Offers
- Dynamic Reserve Zone Modeling
- Simplified Operating Reserve Demand Curve (ORDC) Enhancements
- Fast-Start Pricing*
- Others??

**Mid-Term (Q1 2019):**
- 30-Minute Reserve Market
- Complete ORDC Modeling
- Fast-Start Pricing*
- Others??

**Long-Term (TBD):**
- Broader ELMP implementation
- Day-ahead Reserve Modeling and Shortage Pricing
- Others??

* Implementation dependent on FERC process and approval/rejection.
Synchronized Reserve Market

PROBLEMS:

- Poor Tier 1 response
- Reliance on SR that are not obligated to provide or penalized for not providing
- Pricing that is inconsistent with system conditions and/or reliability value

PJM DISCUSSED SOLUTIONS:

- Consolidate Tier 1 and Tier 2 products and obligate all assigned SR
- Penalize all assigned SR for failure to provide
- Remove reserve specific offer data and rely on energy offer data where possible
  - SR availability, SR Ramp Rate, Spin Max
- Are SR offer prices needed?

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Simplified ORDC Enhancements

Price = Loss of Load Probability (Reserves) \times Value of Lost Load

Value of Lost Load

Price ($/MW)

Reserves (MW)

Operating Reserve Demand Curve
Simplified ORDC Enhancements

Price = Loss of Load Probability (Reserves) x Value of Lost Load
### Short and Mid-Term Goals

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<tr>
<th>Goal</th>
<th>2018</th>
<th>2019</th>
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<td><strong>Synchronized Reserve – Consolidation and Accuracy</strong></td>
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