

PJM Proposed Goals

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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?



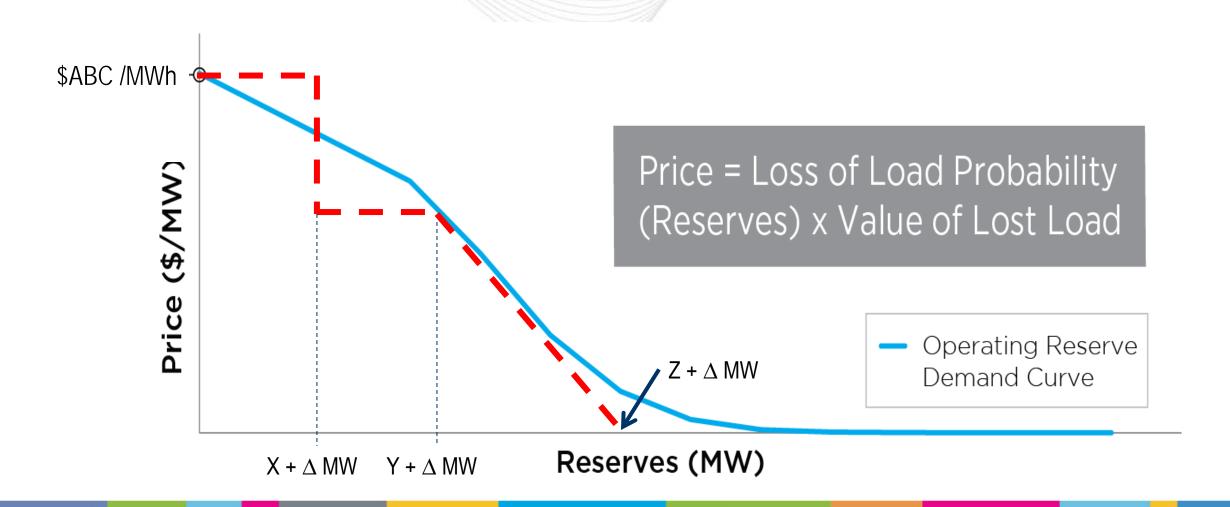
Simplified ORDC Enhancements



Reserves (MW)



Simplified ORDC Enhancements



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Short and Mid-Term Goals

	2018			2019			
Short-Term Mid-Term Implementation	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Synchronized Reserve – Consolidation and Accuracy			*				
Simplified ORDC Enhancements			*				
Dynamic Reserve Zone Modeling			*				
Fast Start Pricing Implementation*			*				
30 Minute Reserve Market					*		
Complete ORDC Modeling					*		