

<b>Effective Date</b>	10.1.2022
<b>Impacted Manual #(s)/Manual Title(s):</b>	
Manual 11: Energy & Ancillary Services Market Operations	
<b>Conforming Order(s):</b> Docket No. EL19-58-000 & ER19-1486-000	
EL19-58-000 Tariff Revision Concerning Reserve Price Formation ER19-1486-000 Tariff Revision Concerning Reserve Price Formation	
<b>Associated Issue Tracking Title:</b>	Energy Price Formation
<b>Committee Approval Path - What committee(s) have already seen these changes?</b>	
MIC First Read: 8.10.2022 MIC Endorsement: 9.7.2022 MRC First Read: 8.24.2022 MRC Endorsement: 9.21.2022	
<b>MRC 1<sup>st</sup> read date:</b>	8.24.2022
<b>MRC voting date:</b>	9.21.2022
<b>Impacted Manual sections:</b>	
<b>Reason for change:</b>	
Changes to support the filed changes at FERC associated with Reserve Price Formation	
<b>Summary of the changes:</b>	
<p><b>Existing Sections Merged:</b></p> <ul style="list-style-type: none"> <li>• Current section 4: Overview of the PJM Synchronized Reserve Market</li> <li>• Current section 4b: Overview of the PJM Non-Synchronized Reserve Market</li> <li>• Current section 11: Overview of the Day-ahead Scheduling Reserve Market</li> </ul> <p><b>New Reserve Sections:</b></p> <ul style="list-style-type: none"> <li>• Section 4: PJM Reserve Markets <ul style="list-style-type: none"> <li>○ 4.1 Overview of the PJM Reserve Markets</li> <li>○ 4.2 PJM Reserve Markets Offer Business Rules <ul style="list-style-type: none"> <li>▪ 4.2.1 Reserve Markets Resource Eligibility <ul style="list-style-type: none"> <li>• 4.2.1.1 Requests for Eligibility for Nuclear, Wind, Solar Resources</li> <li>• 4.2.1.2 Economic Load Response Reserve Eligibility</li> </ul> </li> <li>▪ 4.2.2 Reserve Resource Offer Requirements <ul style="list-style-type: none"> <li>• 4.2.2.1 Communication for Reserve Capability Limitation</li> </ul> </li> <li>▪ 4.2.3 Reserve Markets Resource Offer Structure</li> <li>▪ 4.2.4 Offer Period Timing</li> <li>▪ 4.2.5 Reserve Markets Resource Capability <ul style="list-style-type: none"> <li>• 4.2.5.1 Reserve Markets Capability for Online Generation Resources</li> </ul> </li> </ul> </li> </ul> </li> </ul>	

- 4.2.5.2 Reserve Markets Capability for Offline Generation Resources
- 4.2.5.3 Reserve Markets Capability for Synchronous Condensers
- 4.2.5.4 Reserve Market Capability for Hydropower Resources
- 4.3 Reserve Requirement Determination
  - 4.3.1 Locational Aspect of Reserves
  - 4.3.2 Creation of New Reserve Subzones
  - 4.3.3 Reserve Demand Curves and Penalty Factors
- 4.4 Reserve Markets Clearing
  - 4.4.1 Product and Locational Substitution
  - 4.4.2 Day-Ahead Reserve Market Clearing
  - 4.4.3 Real-Time Reserve Market Clearing
    - 4.4.3.1 Deselection of Reserve Resources in Real-Time
  - 4.4.4 Opportunity Costs for Condensers in the Reserve Clearing
  - 4.4.5 Determination of Reserve Clearing Prices
- 4.5 Event Performance
  - 4.5.1 Performance Verification
  - 4.5.2 Non-Performance
- 4.6 Reserve Obligations
- 4.7 Bilateral Transactions
- 4.8 Settlements

**Edits to Existing Sections**

- 1 – Overview
- 1.1 – PJM Responsibilities
- 2.3.3.2 – Generation Schedules
- 2.3.7 - Mechanical/Technical Rules
- 2.7 – Locational Pricing Calculator (LPC)
- 2.8 – The Calculation of Locational Marginal Prices (LMPs) During Emergency Procedures
- 2.9 – Shortage Pricing
- 2.14 – Balancing Operating Reserve Cost Analysis
- 3.1 – Overview of the PJM Regulation Market
- 3.2.1 – Regulation Market Eligibility
- 3.2.7 – Regulation Market Clearing
- 3.2.7.5 – Total Offer
- 5.2.4 – Markets Database System
- 10.1 – Overview of Demand Resource Participation
- 10.2 – Demand Resource Registration Requirements
- 10.2.1 – Registration Combinations
- 10.2.2 – Curtailment Service Providers
- 10.4.1 – Metered Data
- 10.5 – Aggregation for Economic, Pre-Emergency and Emergency Demand Resources

**Additional Changes:**

- Section 2.5.3.3 - Real-time Security Constrained Economic Dispatch Methodology
  - Updated Achievable Target MW calculation
  - Updated definition of up/down ramp rate used
  - Updated diagram to reflect these changes
- Updated DA Market Ops owner from Mike Ward to Joe Ciabattoni