Fast-Start Pricing M-11, M-18 & M-28 Revisions

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Fast Start Timeline

- The December 17, 2020 Fast Start order included a compliance obligation to address a few items including PJM's preferred implementation date
  - PJM compliance filing on February 16, 2021 to address the December 2020 order
- FERC approved PJM's filing on May 20, 2021 with an effective date of July 1, 2021
- PJM filed a request to move the effective date to avoid implementation during summer peak period
- FERC approved PJM's request and with an effective date of September 1, 2021

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Fast Start Pricing Order Highlights

- Implement separate dispatch and pricing runs in day-ahead and real-time markets
- Define fast-start resources as those with a total time to start and minimum run time of less than or equal to one hour
- Amortize start-up and no-load in “effective” offer using integer relaxation
- Validate composite offers greater than $1000/MWh prior to setting price
- Use lost opportunity cost (LOC) to provide incentive to follow dispatch
- Address any issues regarding double payment stemming from implementation in day-ahead and real-time market

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Manual 11 – Energy & Ancillary Services Market Operations

Manual 11: Energy & Ancillary Services Market Operations, Revision 116

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Section 2.1 Re-organized and Updated

- Section 2.1 Overview of PJM Energy Markets
  - Existing section and language with minor modifications
- Section 2.1.1 Fast-Start Capable Resources
  - New Section
- Section 2.1.2 Fast-Start Capable Adjustment Process
  - New Section
- Section 2.1.3 Eligible Fast-Start Resources
  - New Section
- Section 2.1.4 Day-ahead Energy Market
  - New section containing existing language with minor modifications
- Section 2.1.5 Real-time Energy Market
  - New section containing existing language with minor modification

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New Day-ahead Sections

- Section 5.2.7 Calculation of Day-ahead Prices
  - This section was previously 5.2.6.1
- Section 5.2.7.1 Day-ahead Integer Relaxation
- Section 5.2.7.2 Energy Offers used in Day-ahead Price Calculation
- Section 5.2.7.3 Determination of LMPs for Generation Resources with Composite Energy Offers Greater than $1,000/MWh and equal to or below $2,000/MWh
- Section 5.2.7.4 Determination of LMPs for Generation Resources with Offers Greater than $2,000/MWh
- Section 5.2.7.5 Determination of LMPs for Composite Energy Offers Greater than $2,000/MWh

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New Real-Time Sections

- Section 2.3.6.3 Generation Resource Composite Energy Offer Screening Process for Composite Offers more than $1,000/MWh
- Section 2.7.1 Energy Offers used in Real-time Price Calculation
- Section 2.7.3 Determination of LMPs for Generation Resources with Composite Energy Offers greater than 1,000/ MWh and equal to or below $2,000/MWh
- Section 2.7.5 Determination of LMPs for Composite Energy Offers Greater than $2,000/MWh

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New Economic Load Response Sections

- Section 10.3.1 Economic Load Response Resource Composite Energy Offer Screening Process for Composite Offers more than $1,000/MWh

- Section 10.3.2 Determination of LMPs for Economic Load Response Resources with Composite Energy Offers greater than 1,000/ MWh and equal to or below $2,000/MWh

- Section 10.3.3 Determination of LMPs for Composite Energy Offers Greater than $2,000/MWh

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Clarification Changes

- Multiple sections updated to provide clarity on how Fast-Start Pricing will impact the current business rule(s)

- Section 2.2
- Section 2.3.2.3
- Section 2.3.6.1
- Section 2.5
- Section 2.7
- Section 2.8
- Section 2.9
- Section 2.9.1
- Section 2.17
- Section 3.1
- Section 3.2.7.4
- Section 3.2.7.5
- Section 4.1
- Section 4.2.6
- Section 4b.1
- Section 4b.2.4
- Section 4.2.9
- Section 7.2
- Section 7.3.4
- Section 11.2.3
- Section 11.2.5
- Attachment D

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Retired, Renumbered or Retitled Sections

- Retired
  - Section 2.13
- Renumbered
  - Section 2.7.2 – previously section 2.7.1
  - Section 2.7.4 – previously section 2.7.2
  - Section 10.3.4 – previously section 10.3.1
- Retitled
  - Section 2.4 – title and language updated to use proper terminology

- In addition to the Fast-Start changes, clarifying language was added to Section 9.1 in regard to intraday updates for Ramp Rate parameters.

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Manual 18 – PJM Capacity Market

Manual 18: PJM Capacity Market, Revision 48

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Fast Start Pricing PAI Changes

- Clarify Scheduled MW used for Excusal and Bonus purposes in PAI settlement calculated using Dispatch Run LMP
  - Footnotes added to relevant descriptions in Section 8.4A

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Manual 28 – Operating Agreement Accounting

Manual 28: Operating Agreement Accounting , Revision 85

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Fast Start Pricing Market Settlement Changes

- Dispatch Differential Lost Opportunity Cost Credits
  - 5.2.9 – credit calculation
  - 5.3.6 – charge calculation
- Double Counting of Commitment Costs
  - 5.2.1 – describes the offset

- Further details located in Appendix

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Next Steps

	MIC	MRC
First Read	7.14.2021	7.28.2021
Endorsement	8.11.2021	8.25.2021

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Manual 28 – Operating Agreement Accounting

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M-28 Revision Summary – Section 5 Operating Reserve Accounting

- Operating Reserve Accounting Overview – Section 5.1
- Credit for Operating Reserve – Section 5.2
  - Added applicable Fast Start component to list
    - Pool-scheduled and dispatchable self-scheduled resources eligible for Dispatch Differential Lost Opportunity Cost credits
  - Removed reference to “resources providing quick start reserve”

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M-28 Revision Summary – Section 5 Operating Reserve Accounting

- Credits for Pool-Scheduled Generating Resources – Section 5.2.1
  - Describes the offset to Day-ahead Operating Reserve credits to account for double counting of commitment costs
    - Calculations for Day-ahead and Balancing Operating Reserve Targets to determine the applicable offset to Day-ahead Operating Reserve credits

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M-28 Revision Summary – Section 5 Operating Reserve Accounting

- Dispatch Differential Lost Opportunity Cost (DD LOC) Credits – Section 5.2.9
  - These credits ensure that resources dispatched down to accommodate the inflexibility of Fast-Start Resources follow PJM's dispatch instructions to maintain power balance
  - Describes the settlement calculations to determine if a resource is eligible to receive DD LOC credits
  - Applies to pool-scheduled and dispatchable self-scheduled resources that are providing only energy in the real-time market

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M-28 Revision Summary – Section 5 Operating Reserve Accounting

- Charges for Operating Reserve – Section 5.3
  - Dispatch Differential Lost Opportunity Cost credits are allocated as charges to market participants based on their ratio share of real-time load plus exports
  - See Manual 28 periodic review to see layout of 5.3.6 for Fast Start language

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