5-Minute Settlements

As of December 2017
Overview

- Proposed implementation date now April 1, 2018
- FERC Order 825 – Sub-Hourly Settlements
  - Align settlement and dispatch intervals by:
    - Settling energy transactions in its real-time markets at the same time interval it dispatches energy
    - Settling operating reserves transactions in its real-time markets at the same time interval it prices operating reserves
    - Settling intertie transactions in the same time interval it schedules intertie transactions
  - Final Rule issued June 16, 2016
  - Compliance Filing submitted January 11, 2017
- Align prices with resource dispatch instructions and operating needs, providing appropriate incentives for resource performance
Member education sessions 1/8/2018 – agenda posted on forum page.

The following MSRS reports containing static test data for the operating day of December 3, 2016 have been released in the MSRS training environment.

- Spot Market Energy Charge Summary
- Energy Market & Congestion Loss Charges Details
- Generator LMP Charge Summary
- Balancing Generator LMP Charges
- Explicit Loss Charges
- Explicit Congestion Charges
- Real-Time Daily Energy Transactions*  
- Day-Ahead Daily Energy Transactions*  

* Denotes new
Day-ahead and Real-time LMP Postings

Hourly RT and DA LMP CSV files
Available through March 31, 2018
Will no longer be published effective April 1, 2018

Production Data Miner
Hourly RT LMPs, Ancillary Service Clearing Prices, and DA LMPs available in August 2017
Hourly values will continue to be published in Data Miner after April 1, 2018
5 Minute RT LMPs and Ancillary Service Clearing Prices published on April 1, 2018
System Changes

- Market Settlement Calculation System (MSCS)
- Market Settlement Reporting System (MSRS)
  - New 5 Minute reports
  - Minimize changes to current hourly reports
- Power Meter
  - Accept 5 minute meter data (though not required)
- Emergency Procedures application changes
  - User Interface changes
  - XML file changes
PJM will be implementing the following:
- Transpose the data label column into numerous report columns and add in EPT Interval Ending and GMT Interval Ending columns
  - Conserves report width, but adds more rows to report
  - Removes “Total” column
### Option Implemented: Transposed Data Labels

<table>
<thead>
<tr>
<th>Custom ID</th>
<th>Custom Code</th>
<th>Data</th>
<th>EFT Interval Ending</th>
<th>GMT Interval Ending</th>
<th>Unit ID</th>
<th>Unit Name</th>
<th>Unit Ownership Share</th>
<th>DA Generator Unit (MW)</th>
<th>DA Scheduled MWh</th>
<th>Dispatch Rate (MW)</th>
<th>RT Generator (MW)</th>
<th>RT Generation (MW)</th>
<th>DA Schedule ID</th>
<th>DA Energy Offer ($)</th>
<th>DA No-Load Cost ($)</th>
<th>DA Startup Cost ($)</th>
<th>DA Value ($)</th>
<th>DA Net Revenue ($)</th>
<th>Scheduled MWh</th>
<th>Scheduled MWh Max (MWh)</th>
<th>RT Schedule ID</th>
<th>Segment ID</th>
<th>BOR Reason ID</th>
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**Z**

- Economic Min (MW)
- Economic Max (MW)
- RT Dispatch Decided Type
- RT Dispatch Decided MWh
- RT MWh Used
- RT Energy Offer ($)
- RT No-Load Cost ($)
- RT Startup Cost ($)
## Existing Hourly Data: Where will data exist for an Operating Day?

<table>
<thead>
<tr>
<th>Operating Days &lt; 4/1/2018</th>
<th>Operating Days &gt;= 4/1/2018</th>
</tr>
</thead>
</table>
| **Hourly RT LMP & Ancillary Service LMP (Daily and Monthly files)** | • Flat files on pjm.com**  
  • Data Miner 2 | • Data Miner 2 |
| **Hourly DA LMP (Daily and Monthly Files)** | • Flat files on pjm.com**  
  • Data Miner 2 | • Data Miner 2 |
| **Operational Data Page** | pjm.com** |  |
| **RT Marginal Value** | • Flat files on pjm.com**  
  • Data Miner 2 | • Data Miner 2  
  • Consolidated into 1 data feed  
  • 5-minute version only |
| **RT Transmission Constraints** | • Flat files on pjm.com**  
  • Data Miner 2 |  |
| **Preliminary Billing Data** |  | • Flat files on pjm.com**  
  • Data Miner 2 |
| • Operating Reserve Rates |  |  |
| • Regulation |  |  |
| • Sync & Non-Sync Reserves |  |  |
| • DASR |  |  |

**3Q 2018 pjm.com flat files retirement plan and Operational Data Page changes will continue to be discussed at Tech Change Forum**
5-minute Settlements Public Data Availability

Operating Days >= 4/1/2018

<table>
<thead>
<tr>
<th>5-minute RT LMPs</th>
<th>Data Miner 2 only</th>
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</thead>
<tbody>
<tr>
<td>5-minute Ancillary Service LMPs</td>
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<tr>
<td>5-minute RT Marginal Value and Transmission Constraints</td>
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</tbody>
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- Preliminary and Final load weighted average transmission zone LMPs and residual aggregate LMPs will be available