

# Synchronized Reserve Market Design Options

EPFSTF

June 8, 2018

Catherine Tyler



Monitoring Analytics

# Reserve Locations

## PJM

- RTO Zone
- Single predefined subzone
- Subzones published quarterly and posted in real time

## IMM

- RTO Zone
- Any subzone area for which a transmission constraint prevents the use of RTO reserves, for the loss of a generator.
- Subzones published quarterly and posted in real time.

# Synchronized Reserve Eligibility

## PJM

- electrically located in PJM
- synchronized to the grid
- 10 min. response
- not emergency capacity
- sustain for 30 minutes
- available to provide reserves (ex: not testing)

## IMM

- electrically located in PJM (not pseudo tied)
- synchronized to the grid
- 10 min. response
- not emergency capacity
- sustain for 30 minutes
- available to provide reserves (ex: not testing)

# Tier 1 and Tier 2

## PJM

- **Consolidate Tier 1 and 2**
- **Pay all cleared reserves the market price**
- **Impose the same obligation and penalties on all cleared reserves**

## IMM

- **Consolidate Tier 1 and 2**
- **Pay all cleared reserves the market price**
- **Impose the same obligation and penalties on all cleared reserves**

# Adjustments to Available Reserve MW Estimates

## PJM

- **Deselection by unit class**
- **Continue to adjust offer MW by the Degree of Generator Performance (DGP) in the last 30 minutes**
- **Eliminate Tier 1 bias**

## IMM

- **Deselection only by defined unit class, no unit specific deselection**
- **Eliminate DGP adjustments**
- **Eliminate Tier 1 bias**

# Synchronized Reserve Max Output

## PJM

- **Less than or equal to Eco. Max**
- **Used only with prior PJM approval for physical operating reason**
- **Must exceed 0 MW**

## IMM

- **Less than or equal to Eco. Max**
- **Used only with prior PJM approval for physical operating reason**
- **Must exceed 0 MW**

# Synchronized Reserve Ramp Rate

## PJM

- **Remove reserve ramp rates**
- **Use energy ramp rates**

## IMM

- **Remove reserve ramp rates**
- **Use energy ramp rates**
- **Allow for hourly ramp rates with real time updates**
- **Create tariff requirement that Market Sellers must submit based on physical operating capability only**

# Synchronized Reserve Availability

## PJM

- **Online, PJM scheduled capacity resources**
- **Resources without capacity commitment default to availability, may opt out**

## IMM

- **All resources available for energy are available for reserves.**



# Synchronized Reserve Offer Price

## PJM

- Offer price up to an established margin, plus condensing costs
- Margin currently \$7.50/MW
- Remove VOM from offer

## IMM

- Offer price up to an established margin, plus condensing costs
- Revise margin to reflect market behavior
- Remove VOM from offer

# Synchronized Reserve Nonperformance Penalty

## PJM

- **SRMCP x shortfall MW**
- **For all hours of SR over the past 19 days or since the resource last failed to respond to SR event**

## IMM

- **SRMCP x shortfall MW**
- **For all hours of SR over the past 19 days or since the resource last failed to respond to SR event**
- **Adjust shortfall MW so that penalty equals past SR revenues**

**Monitoring Analytics, LLC**

**2621 Van Buren Avenue**

**Suite 160**

**Eagleville, PA**

**19403**

**(610) 271-8050**

**[MA@monitoringanalytics.com](mailto:MA@monitoringanalytics.com)**

**[www.MonitoringAnalytics.com](http://www.MonitoringAnalytics.com)**

