

# DR Availability Window

MIC

February 5, 2025

IMM



Monitoring Analytics

# Status Quo – Nominated Value (Summer)

- **Summer Nominated Value = PLC – SFSL (adjusted for losses)**
  - **Peak Load Contribution (PLC) = MW of capacity purchased by a customer.**
    - Determined by EDC/LSE
    - Used in allocation of capacity costs to customers.
  - **Summer Firm Service Level (SFSL) = reduced customer load level when dispatched in the summer (CSP determined value)**

## Status Quo – Nominated Value (Winter)

- **Winter Nominated Value =  $WPL \times ZWWAF - WFSL$  (adjusted for losses)**
  - **Winter Peak Load (WPL) = the average of the DR customer's specific peak hourly load between HE 7:00 EPT through 21:00 EPT on the PJM defined five coincident peak days from December through February two delivery years prior**
  - **Zonal Winter Weather Adjustment Factor (ZWWAF) = Weather normalization factor**
  - **Winter Firm Service Level (WFSL) = reduced customer load level when dispatched in the winter (CSP determined value)**

## DR Resource Nominated Value

- **The Nominated DR Value during the summer period of June through October and May of the Delivery Year is based on the sum of the summer nominated DR values of the registrations linked to such Demand Resource.**
- **The Daily Nominated DR Value during the non-summer period of November through April is based on the lesser of the summer or winter nominated DR values of the registrations linked to such Demand Resource.**
- **There is no winter only DR product in RPM**

## Status Quo – ELCC for DR

- **Demand Resources have performance windows that differ by season**
  - **Summer: 1000-2200 EPT**
  - **Winter: 0600-2100 EPT**
- **In the ELCC analysis, DR availability during hours within the performance window is modeled to be scaled proportional to system load**

$$\left( \frac{\textit{Simulated Hourly Load}}{\textit{50/ 50 Simulated Peak Load Forecast}} \right) \times \textit{DR Nominated ICAP}$$

- **DR availability during hours outside of the seasonal performance window is assumed to be zero**

# IMM Concerns with Status Quo

- **WPL determination uses customer's noncoincident peak loads between HE7 through HE21 on the five PJM defined winter coincident peak days**
  - **Results in an aggregate WPL that overstates the expected load and corresponding reduction capability of DR in any one hour**
- **DR nominated ICAP scaled proportional to system load.**
  - **No reason that this should correctly reflect the winter load characteristic of DR customers**
  - **Results in inaccurate representation of hourly DR load and corresponding reduction capability**

## IMM Concerns with Status Quo

- **ELCC analysis assumes DR customers reduce from WPL (scaled relative to system load) to WFSL**
  - **Experience during Elliott demonstrated that DR customer loads were already significantly reduced when called upon**
  - **Observed energy reduction was far less than what was expected based on this assumption**
  - **Result is that current ELCC is overstated**
- **Unlike other resources, ELCC calculation for DR is not premised on past resource operational performance during critical hours.**
  - **DR is not treated like all other capacity resources.**

# IMM Concerns with Status Quo

- **Issues with measured performance, including ignoring load increases in the calculation of reductions.**
  - **DR is not treated like all other capacity resources.**
- **There are no rules defining when PJM dispatch should or will call on DR.**
  - **DR is not treated like all other capacity resources.**
- **PJM does not know nodal location of DR. Cannot dispatch efficiently.**
  - **DR is not treated like all other capacity resources.**



## IMM Concerns with Status Quo

- **In order to be a substitute for generation, compliance by demand resources with PJM dispatch instructions should include both increases and decreases in load. Compliance of demand resources for capacity purposes during a Performance Assessment Event is measured relative to either Peak Load Contribution or Winter Peak Load, which are static values. If a demand resource's metered load increases above these reference values during a PAI, the current method applied by PJM simply ignores increases in load and thus artificially overstates compliance.**

# PJM Solution Package

- **Expand performance window to 24 hours per day, 365 days per year**
- **Select a single hour for determination of coincident peak WPL**
  - **Initially proposed to be HE 0900 EPT**
- **Calculate scaling factors for the hourly DR load and reduction capability in the ELCC analysis based on the aggregate hourly load profiles during five system CP days provided in support of WPL values.**

# Positive Elements of PJM Package

- **PJM's proposed use of a single coincident peak hour measure for WPL and associated scaling factors is a clear improvement.**
  - **Use of data from only five peak days is too limited.**
  - **Choice of coincident peak hour needs more support.**
- **PJM's elimination of the aggregate scaling factor is a clear improvement.**
- **PJM's expansion of the performance obligation of DR to 8,760 hours per year is a clear improvement.**

## IMM Concerns with PJM Package

- **PJM's Scenario 1 decreases ICAP from the cleared ICAP and calculates an artificially high ELCC.**
- **PJM's Scenario 2 assumes that CSPs will reduce their nominated winter firm service levels, nullifying the corrections to the nominated ICAP resulting from the revised WPL coincident peak method and calculates an artificially high ELCC.**

# IMM Concerns with PJM Package

- **PJM ELCC analysis still assumes DR customers reduce from WPL (using new scaling factors) to WFSL**
  - **New scaling factors do not solve this issue.**
  - **Scaling factors based on data from only five system CP days**
  - **Observed demand reductions during Elliott were far less than expected based on this assumption**
  - **Experience during Elliott demonstrated that DR customer loads were already significantly reduced when called upon.**
  - **Result is that proposed ELCC is overstated**

## IMM Concerns with PJM Package

- **Unlike other resources, ELCC calculation for DR will still not be based on past operational performance of individual resources during critical hours.**
  - **DR is not treated like all other capacity resources.**
- **There are no resource specific performance adjustments for DR.**
- **Measured performance ignores load increases above WPL in the calculation of reductions.**

# IMM Concerns with PJM Package

- **There are no rules defining when PJM dispatch should or will call on DR.**
- **PJM does not know nodal location of DR. PJM cannot dispatch DR efficiently.**



# IMM Concerns with PJM Package

- **DR ELCC modifications should be part of overall ELCC review currently in stakeholder process**
- **No reason to make an expedited and inadequately supported change to DR ELCC while ignoring other ELCC issues**
  - **E.g. winter thermal resource ELCC.**
- **PJM proposal is not complete.**
  - **PJM proposes new method only for winter.**
  - **PJM recognizes that the new method is also applicable to summer but is not proposing to implement for summer.**



# IMM Package

- **Apply same rules for summer and winter.**
  - **The approach needs to be consistent for all hours.**
- **The WPL coincident peak hour used should be based on ongoing analysis of load data for all DR customers for all hours.**
  - **Relevant DR hours should be based on high risk EUE hours.**
  - **Analysis should not be limited to five days.**
- **Use actual data for the same historical EUE hours used for generation resources in calculating ELCC for DR.**

## IMM Package

- **Introduce resource specific performance adjustment factor consistent with other ELCC resources.**
- **Require inclusion of load increases above WPL in measured performance during PAI.**
  - **Status quo ignores load increases above WPL in the calculation of reductions.**
- **Adopt objective criteria for when PJM will dispatch load management DR.**

# IMM Package

- **Consider DR ELCC issues in ongoing broad ELCC review together with all ELCC issues.**
  - **PJM proposal not complete: winter only and not summer.**
  - **There are strong interaction effects across technologies.**
  - **Do not modify DR ELCC on a one off basis.**
  - **All ELCC issues need to be addressed at the same time as a result of interaction effects.**
- **Establish a separate stakeholder process to review and recognize the appropriate role of DR in PJM Capacity Market.**

# Overpayment of DR in 25/26 BRA

- **Correct calculation of DR ICAP in 25/26 BRA shows that DR ICAP was overstated and therefore that DR was overpaid in that auction.**
  - **Result of NCP load vs CP load for DR participants.**
- **The estimated reduction in nominated ICAP is 2,256.3 MW.**
- **ELCC for DR was 76 percent.**
- **Overpayment estimate:**
  - **Cleared UCAP reduced by 1,714.8 MW, 28.3 percent**
  - **DR revenue reduced by \$182.7M, 28.3 percent, from \$646.1M actually paid.**

# Increase in DR Revenue for Next Auctions

- **The proposal to increase DR ELCC will increase payments to DR in next BRAs.**
- **If the ELCC increases from 76 percent to 94 percent and the total nominated ICAP from the 25/26 BRA is the same:**
  - **Cleared UCAP increases by 1,436.4 MW, 23.7 percent**
  - **Equivalent to 1,802.5 MW ICAP using actual AUCAP of 79.69 percent.**
  - **DR revenue would increase by \$153M, 23.7 percent, from \$646.1M at 25/26 BRA prices to \$799.1M.**

## Increase in DR Revenue for Next Auctions

- **If the 2025/2026 BRA clears at \$325/MW-Day, the ELCC increases from 76 percent to 94 percent, and the total nominated ICAP is the same:**
  - **DR revenue would increase by an additional \$81.8M, 10.2 percent, from \$799.1M to \$880.9M.**
- **The total increase in DR revenue from the combined effect of higher ELCC and higher BRA clearing price would be \$234.9M or 36.4 percent.**

**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)**

