

# Summary of Changes Impacting DR Capacity Performance Filing

DRS Meeting  
January 21, 2015

- Filing proposes a number of reforms to ensure that resources committed to meet the PJM Region's reliability needs will deliver the promised energy and reserves when called upon in emergencies
- ER15-623 filed December 12, 2014
- Comments due January 20, 2015
- PJM requested an effective date of April 1, 2015

- Capacity Resource Product Definitions
- Capacity Resource Constraints
- Price Decrements
- Non-Performance Assessment
- Measuring non-summer load reductions
- RPM Auction Credit Rates
- Elimination of DR Factor
- Elimination of Short Term Resource Procurement Target
- LSE Capacity Obligations

- New capacity product
- Capacity Performance Resource shall provide energy and reserves when called upon by PJM during emergencies
- Subject to new Non-Performance Charge
- Eligible to offer into RPM Auctions effective 2018/2019 Delivery Year\*
- Sole capacity product beginning 2020/2021 Delivery Year

*\*Generation Capacity Performance Resources may offer into proposed Transitional Incremental Auctions for 16/17 & 17/18 Delivery Years.*

- Redefined summer capacity product
- Base Capacity Resources are those capacity resources which provide enhanced assurance of delivery and reserves during hot weather operations
- Subject to Non-Performance Charge only when they fail to perform under emergency conditions during June through September
- Eligible to offer into RPM Auctions for 2018/2019 & 2019/2020 Delivery Years only

- Limited, Extended Summer, and Annual DR product definitions eliminated effective with 2018/2019 Delivery Year
- **Base Capacity Demand Resource** may participate in 2018/2019 & 2019/2020 Delivery Years only
- **Capacity Performance Demand Resource** may participate effective 2018/2019 Delivery Year and is the only type of Demand Resource that may participate effective 2020/2021 Delivery Year

Requirement	Limited DR	Extended Summer DR	Annual DR	Base Capacity Demand Resource (18/19 & 19/20 DY only)	Capacity Performance Demand Resource (Effective 18/19 DY)
Availability	Any weekday, other than NERC holidays, during June – Sept. period of DY	Any day during June- October period and following May of DY	Any day during DY (unless on an approved maintenance outage during Oct. - April)	Any day during June-September of DY	Any day during DY (unless on an approved maintenance outage during Oct.-April )
Maximum Number of Interruptions	10 interruptions	Unlimited	Unlimited	Unlimited	Unlimited
Hours of Day Required to Respond ( <i>Hours in EPT</i> )	12:00 PM – 8:00 PM	10:00 AM – 10:00 PM	Jun – Oct. and following May: 10 AM – 10 PM  Nov. – April: 6 AM- 9 PM	10:00 AM – 10:00 PM	Jun – Oct. and following May: 10 AM – 10 PM  Nov. – April: 6 AM- 9 PM
Maximum Duration of Interruption	6 Hours	10 Hours	10 Hours	10 Hours	No limit

Current Limited, Extended Summer, & Annual DR product definitions eliminated effective 2018/2019 DY.

- Replace Limited and Sub-Annual Resource Constraints with Base Capacity Demand Resource Constraint and Base Capacity Resource Constraint
- **Base Capacity Demand Resource Constraint** – maximum amount of Base Capacity Demand Resources and Base Capacity Energy Efficiency Resources that may clear in RPM Auctions for the Delivery Year
- **Base Capacity Resource Constraint** – maximum amount of Base Capacity Demand Resources, Base Capacity Energy Efficiency Resources, and Base Capacity Generation Resources that may clear in RPM Auctions for the Delivery Year
- Constraints still determined for PJM Region and each modeled LDA



- Replace Limited Resource Price Decrements and Sub-Annual Resource Price Decrements with Base Capacity Demand Resource Price Decrement and Base Capacity Resource Price Decrement
- **Base Capacity Demand Resource Price Decrement** is difference between clearing price for Base Capacity Demand Resources & Base Capacity Energy Efficiency Resources and the clearing price for Base Generation Capacity Resources and represents cost to procure additional Capacity Performance Resources or other Base Capacity Resources out of merit order when the Base Capacity Demand Resource Constraint is binding.
- **Base Capacity Resource Price Decrement** is the difference between clearing price for Base Capacity Resources and Capacity Performance Resources and represents cost to procure additional Capacity Performance Resources out-of-merit when Base Capacity Resource Constraint is binding.

- Replaces DR Event Compliance for Demand Resources, Peak-Hour Period Availability Assessment & Peak Season Maintenance Compliance for generation
- Assesses performance of capacity resources during emergency conditions
- Applies to both Base Capacity Resources and Capacity Performance Resources
- Base Capacity Resources exposed to Non-Performance Charges only for performance during Emergency Actions in summer months

- Compare a resource's Expected Performance against Actual Performance for each Performance Assessment Hour
- Performance Assessment Hours delineated by PJM's declaration of Emergency Actions.
  - Emergency Action shall mean any emergency action for locational or system-wide capacity shortages that either utilizes pre-emergency mandatory load management reductions or other emergency capacity, or initiates a more severe action, including but not limited to, a Voltage Reduction Warning, Voltage Reduction Action, Manual Load Dump Warning, or Manual Load Dump Action.
- Demand Resource's performance will be evaluated if dispatched during Performance Assessment Hour
- Expected Performance for Demand Resource is ICAP commitment value
- Evaluate performance and calculate shortfall/excess for each Performance Assessment Hour separately
- Shortfall subject to Non-Performance Charge
- Excess (bonus performance) may be eligible for Performance Credit

- Non- Performance Charge Rate is based on yearly Net CONE (Capacity Performance Resources) or yearly Resource Clearing Price ( Base Capacity Resources) and a small divisor (i.e., an assumed 30 Emergency Action hours per year).
- Non-Performance Charge Rate for CP Resources (\$/MWh) = [LDA Net CONE (\$/MW-day) \* number of days in Delivery Year]/30
  - If LDA Net CONE = \$300/MW-day, the Non-Performance Charge Rate = [\$300/MW-day \* 365 days]/30 = \$3,650/MWh
- Non-Performance Charge Rate for Base Capacity Resources (\$/MW-hr) = [Weighted Average Resource Clearing Price (\$/MW-day) for such resource \* number of days in Delivery Year]/30

- Stop-Loss provision limits the total Non-Performance Charges assessed
- Limits maximum charges for calendar month and for a calendar year
  - Capacity Performance Resources:
    - For a month, the maximum Non-Performance Charge is  $0.5 * \text{Net CONE} * \text{ICAP commitment on the resource}$
    - For a year, the Non-Performance Charge is  $1.5 \text{ Net CONE} * \text{ICAP commitment on the resource}$
  - Base Capacity Resources
    - For year, the maximum Non-Performance Charge = total capacity revenues due to resource for Delivery Year

- Non-Performance Charges will be distributed to resources (of any type, even if not Capacity Resources) that perform above expectations
- Actual Performance above Expected Performance is considered Bonus Performance.
- Bonus Performance will be assigned a share of the collected Non-Performance Charge revenues based on the ratio of its Bonus Performance to total Bonus Performance from all resources for the same Performance Assessment Hour
- All performance from a resource with no capacity commitment is considered Bonus Performance

- Amount of non-summer load reduction provided is to be measured using the same Customer Baseline Load (CBL) methodology currently employed for measuring load reductions in the energy market.
- DLC programs may continue to use the control signal as measurement of non-summer load reduction
- No change in measurement of load reduction during the summer months (June-September)

- Allow Seller which own one or more Capacity Storage Resources, Intermittent Resources, Demand Resources, or Energy Efficiency Resources that are located within the same LDA to offer as a Capacity Performance Resource which represents the aggregated UCAP value of such resources
  - 18/19 & 19/20 - Sell Offer may be Capacity Performance, Base Capacity Resource, or coupled offer as Capacity Performance and Base Capacity



- Retain current RPM Auction Credit Rates for Base Capacity Resources and propose new RPM Auction Credits Rates for Capacity Performance Resources

Auction Credit Rate	Current RPM Auction Credit Rates (apply to Base Capacity Resources)	Proposed RPM Auction Credit Rates (apply to Capacity Performance Resources)
Pre-BRA	greater of (i) \$20/ MW-day or (ii) .3 * RTO Net CONE ( in \$/MW-day), times the number of days in the Delivery Year.	greater of (i) 0.5*PJM Region Net CONE (\$/MW-day) or (ii) \$20/MW-day, times number of days in the DY.
Post-BRA	greater of (i) \$20/MW-day or (ii) .2 *applicable BRA RCP (\$/MW-day), times the number of days in the Delivery Year.	greater of the following daily rates, times number of days in DY: <ul style="list-style-type: none"> <li>\$20/MW-day</li> <li>0.20 times applicable BRA RCP (\$/MW-day)</li> <li>Lesser of (i) 0.5*PJM Region Net CONE or (ii)1.5*PJM Region Net CONE (in ICAP terms) minus the applicable BRA RCP.</li> </ul>
Pre-IA	greater of (i) 0.3* RTO Net CONE or (ii) 0.24 times the applicable BRA RCP (\$/W w-day), or (iii) \$20 per MW-day, times the number of days in the Delivery Year.	greater of (i) 0.5*PJM Region Net CONE (\$/MW-day) or (ii) \$20/MW-day, times number of days in the DY.
Post IA	greater of (i) \$20/MW-day or (ii) 0.2 * the applicable IA RCP, but no greater than the pre-clearing Incremental Auction Credit Rate for such Incremental Auction, times the number of days in the Delivery Year.	greater of the following daily rates, times number of days in DY: <ul style="list-style-type: none"> <li>\$20/MW-day</li> <li>0.20 times applicable IA RCP (\$/MW-day)</li> <li>Lesser of (i) 0.5*PJM Region Net CONE or (ii)1.5*PJM Region Net CONE (in ICAP terms) minus the applicable IA RCP.</li> </ul>

- Eliminate the use of DR Factor effective with the 2018/2019 Delivery Year
  - DR Factor assumed MW quantity of DR remains constant at any load level, even at level higher than load forecast, resulting in DR Factor that discounts the capacity value of DR.
  - Most demand resources reduce load levels below the PLC to comply; therefore, greater demand reductions are provided during high load periods and DR Factor discounting is no longer necessary.
- DR UCAP Value = Nominated DR Value \* Forecast Pool Requirement

- Eliminate STRPT effective with 2018/2019 Delivery Year
- STRPT (i.e., 2.5% Holdback) introduced to allow more opportunity for short-lead time resources to participate; however, 3 year forward aspect of BRA has proved to be little impediment to participation of DR, EE, generation uprates, or external resources.
- 2.5% holdback suppresses BRA clearing prices by withholding demand

- Propose to expand the peak load data used to allocate capacity obligations
- RTO UCAP obligation to be allocated to zone based on Zonal Obligation Peak Load
- Zonal Obligation Peak Load will no longer be based on prior summer Weather Normalized Summer Peak.
- Zonal Obligation Peak Load will be based on average zonal load at time of (i) four highest summer peak hours for PJM Region, (ii) single highest winter peak hour for PJM Region, (iii) for each day containing Performance Assessment Hours, the hour with the highest PJM Region load level in that day.
- Hours will be compiled for twelve month period ending October 31 preceding the Delivery Year and no single hour will be double-counted.
- EDC is still responsible for allocating Zonal Obligation Peak Load to end-use customer's (i.e., determining Peak Load Contributions) and determining LSE's share of Zonal Obligation Peak Load.