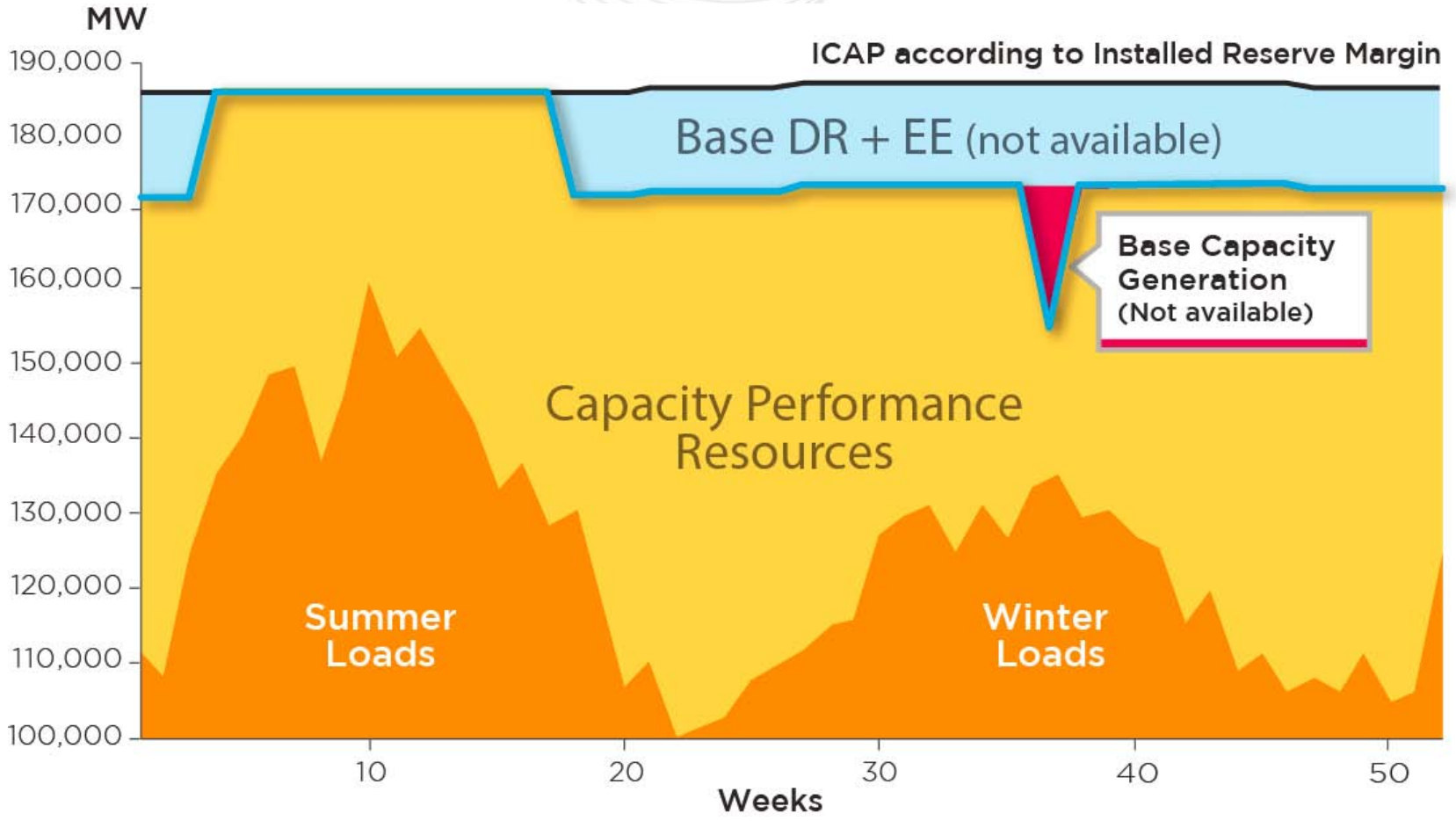
Capacity Performance Proposal

October 15, 2014

- Capacity Products
  - Capacity Performance Product
  - Base Capacity Product
  - Specific Resource Types and Coupling
    - Storage Resources
    - Intermittent Resources
    - Qualifying Transmission Upgrades
    - Resource Coupling
  - Other Issues Related to Capacity Products
    - Base Capacity Resource Constraint
    - Auction Clearing Mechanism
    - Multi-Year Investment Signal

- Demand Response and Energy Efficiency
  - Demand Bidding Process
  - Capacity Performance – DR and EE
  - Base Capacity DR and EE
  - Proposed Changes to EE Eligibility
  - Price Responsive Demand

- Methodology for Establishing Maximum Product Quantities



Guiding Principles

- LOLE not greater than 0.11 days/years (same criterion currently used to calculate the Extended Summer DR Reliability Target)
- Allow for the possibility of price separation between the two Base Capacity products

- Limitation is computed using the LOLE model PRISM
- Limitation methodology is consistent with that currently used to compute the Extended Summer DR Reliability Target with two changes:
  - Base Capacity DR and EE is modeled as available June – September and unavailable from October – May.
  - Base Capacity DR and EE can increase PJM LOLE by 5% (as opposed to the 10% currently permitted for Extended Summer DR)

- Limitation is computed using the LOLE model PRISM. Base Capacity generation can increase PJM LOLE by 5%.
- Base Capacity generation is modeled as fully available 51 weeks of the Delivery Year and up to the 90/10 load level of the peak winter week. It is assumed to be unavailable at the 90/10 winter peak load level and above during the peak winter week.

- Two additional capacity model changes were made:
  - Wind generation is modeled at a 36% capacity factor (based on actual winter performance over the last three years)
  - Ratio of winter rating to summer rating of all Capacity Performance generation was assumed to be 1.03 based on actual performance history

Base Capacity DR and EE demand bids ≤ 8.3%

Base Capacity DR and EE and Base Capacity Gen ≤ 20.0%

- These results are based on the 2017/18 DY. The limitations are expressed as a percentage of the forecasted RTO peak load. The limitations will be updated for the 2018/19 DY.
- Both constraints must be satisfied to ensure PJM LOLE does not exceed 0.11 days/year.
- Using a similar methodology, PJM will also compute limitations on Base Capacity and Base Capacity demand bids for all LDAs modeled separately in an RPM auction.

Unforced Capacity Calculations and Installed Reserve Margin

- ICAP vs. UCAP and Calculation of Unforced capacity
  - Generating Resource
    - OMC treatment permitted only for electric transmission and/or distribution facility-related reasons
  - Intermittent Generation (No Change)
  - Qualifying Transmission Upgrades (No Change)
- Implications of PJM Proposal on Installed Reserve Margin

- Capacity Performance Availability and Flexibility Requirements
  - General
  - Flexibility Requirements
    - Simplified by removing unit “classes”
    - Changed to require parameters consistent with unit-specific, historic performance
    - Storage Resources
    - External Generation Capacity Resources

- Changes to Base Capacity Requirements
  - Changes to Current Capacity to Meet Base Capacity Requirements
    - Flexibility
    - Storage Resource Eligibility

- Peak Period Performance Assurance
  - Proposed Performance Requirement
  - Exceptions from Penalties for Non-Performance
  - Non-Performance Penalty Calculation
  - Non-Performance Penalty Offset
  - Deficiency Penalty vs. Non-Performance Penalty
  - Cleared Capacity Performance DR and EE Demand Bids
  - Base Capacity Resource Penalties
  - Penalty Caps
  - Allocation of Penalties Collected
  - Credit Requirements

- Product Offer Requirements
  - Must offer requirement for resources capable of meeting Capacity Performance requirements
  - Offers up to Net CONE will not be subject to mitigation

- Cost Allocation
  - Current Methodology
  - PJM Proposed Cost Allocation – Retain Existing Method

- Applicability to FRR Entities
  - FRR plans required to meet allocation of Base and Capacity Performance resources
  - Availability of physical penalties for non-performance for FRR entities

- Short-Term Resource Procurement Target

- Transition Auction Mechanism for Delivery Years 2015/16, 2016/17, 2017/18
  - Phase-in over three years
  - 2015/2016: gas/electric market timing, intra-day energy offer updates, cost-based offer cap, incrementally procure up to 10,000 MW of additional resources, work with generators to seek MATS extensions if necessary
    - Rationale: Insufficient time for units to invest sufficiently to make units CP-compliant
    - PJM to use incremental auctions to address need for additional MWs to cover winter 2015/2016 requirements.

- 2016/2017: procure a transitional version of Capacity Performance resources with availability and flexibility requirements described above, but one-third the penalties capped at half of Net CONE
  - Rationale: Phase-in of penalties to recognize need for additional work to make units CP-compliant
- 2017/2018: procure a transitional version of Capacity Performance resources with availability and flexibility requirements described above, but two-thirds the penalties capped at 0.6 times Net CONE
  - Rationale: Phase-in of penalties to recognize need for additional work to make units CP-compliant.