# Demand Resource Participation in ISO-NE Markets

*Overview for the New England Conference of Public Utility Commissioners*

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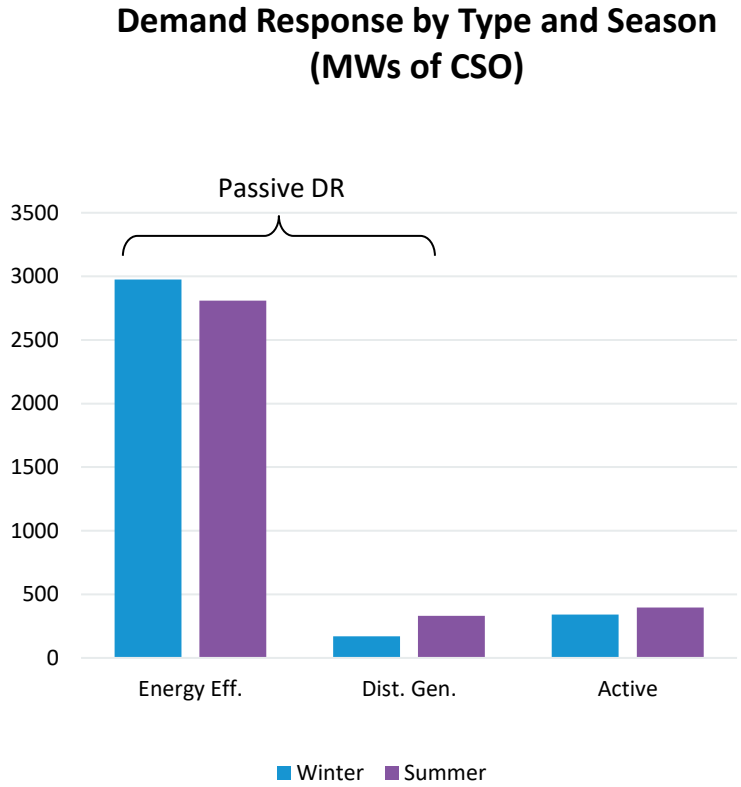
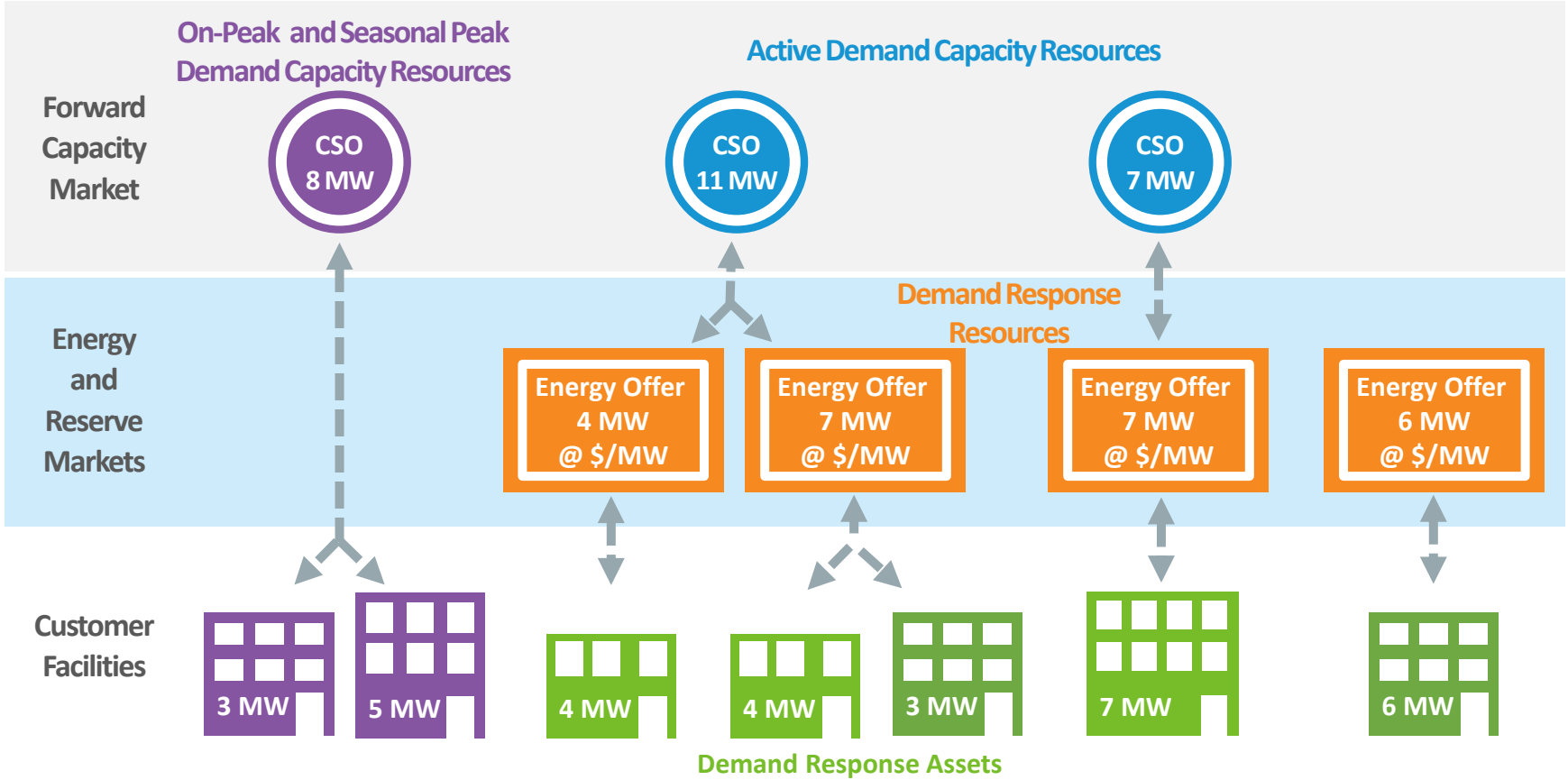
# What Do We Mean by Demand Response?

- Demand response can either be passive or active
  - **Passive** demand response, such as energy efficient light bulbs, reduce electricity demand permanently after they are installed (they do not need to be dispatched)
  - **Active** demand response requires dispatch by a grid operator and a response by a customer or aggregator to reduce demand
- Both types participate in New England's wholesale electricity markets
  - State-regulated utilities may also administer demand response programs to reduce their peak demand, but these programs are not necessarily controlled by or visible to the ISO



# Demand Response: Market Structures

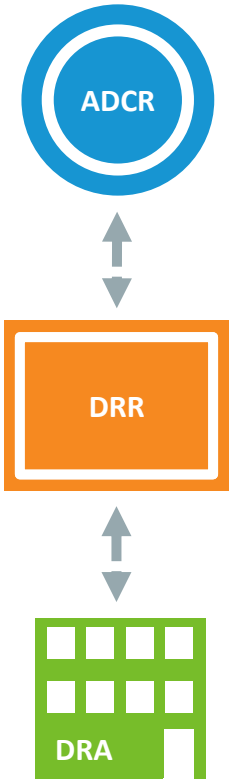


# Active Demand Response: Market Structure

- **Active Demand Capacity Resource (ADCR)**
  - Participates directly in the capacity market as supply
  - Mapped to one or more DRRs in a Dispatch Zone

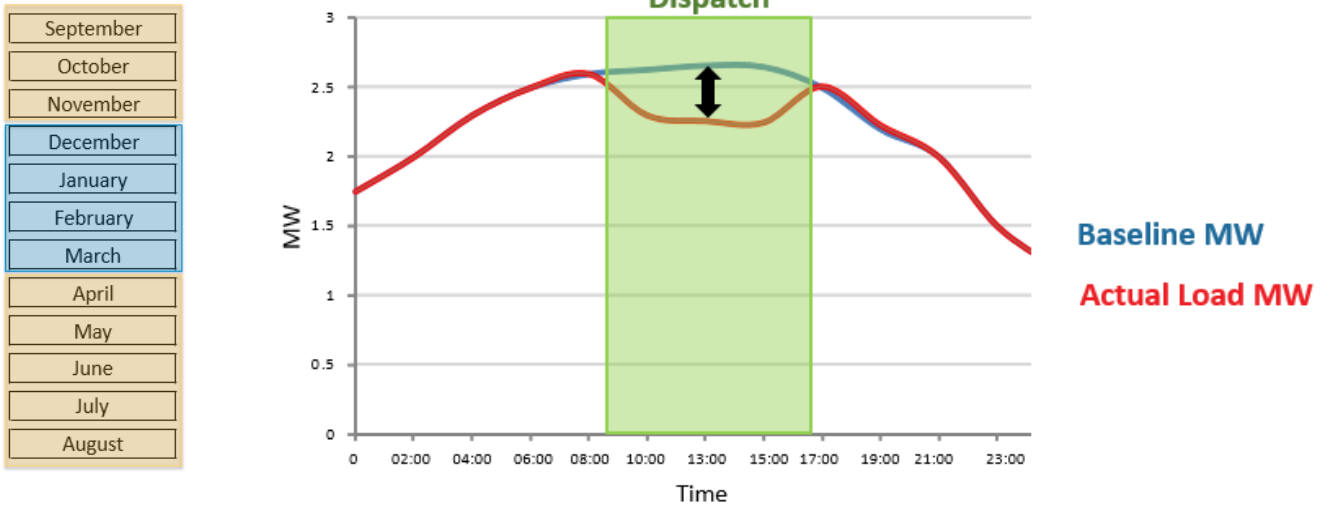
- **Demand Response Resource (DRR)**
  - Must have ≥100 kW of demand reduction capability
  - Offers into energy markets and is dispatched by ISO-NE
  - Mapped to one or more DRAs in a DRR Aggregation Zone
  - Mapped to one ADCR

- **Demand Response Asset (DRA)**
  - Retail delivery point at which demand reduction occurs
  - Must provide at least 10 kW of demand reduction
  - Must provide 5 minute meter data in real time
  - Mapped to one DRR



# Demand Response Resources: Audit Requirements

- Seasonal audits are conducted at least once per season
  - Summer seasonal audit is conducted in September-November or April-August
  - Winter seasonal audit is conducted in December-March
- Demand reduction is measured as the difference between baseline and actual load
  - Calculated at the DRA level and aggregated up to the DRR and ADCR levels



# Passive Demand Response: Participation Models

- **Energy Efficiency**
  - Participates in the capacity market as either "Seasonal" or "On Peak" resource
    - On Peak: load reduction during predetermined hours (e.g., lighting)
    - Seasonal Peak: weather-sensitive measures (e.g., efficient HVAC systems)
    - Based on the reduction in energy use during "Performance Hours"
  - Unable to participate in Energy or Ancillary Services markets

- **Distributed Generation**
  - Small resources that are connected to distribution (not transmission) network
  - Participates in capacity market as either "Seasonal" or "On Peak" resource
    - Not dispatchable by (or directly visible in real time to) ISO New England
    - Qualification based on generation during performance hours

- **Load Management (non-Actively Managed)**
  - Credited demand reductions based on change during performance hours
  - Currently no resources participate using this model

| Demand Resource Type | Performance Hours |
|---|---|
| On-Peak | • H.E. 14:00-17:00 (summer)<br>• H.E. 18:00-19:00 (winter)<br>• Monday - Friday<br>• Non-holidays |
| Seasonal Peak | • ≥ 90% of the most recent 50/50 system peak load<br>• Monday - Friday<br>• Non-holidays<br>• Seasonal Peak Hours are posted to ISO Express at the end of each performance month |

# Passive Demand Response: Participation Rules

- **Capacity Market:**
  - Each On Peak and Seasonal Peak Demand Resource must be ≥ 100 kW
  - If multiple assets are being aggregated into a single Resource:
    - All assets must be located in a single Load Zone
    - May consist of a combination of Load Management and/or Distributed Generation measures, or a combination of Energy Efficiency measures
  - New resources must identify how they expect to measure and validate demand reductions

- **Energy and Ancillary Services Markets:**
  - Passive Demand Resources do not directly participate in the wholesale energy or ancillary services markets

# Passive Demand Response: Metering and Auditing Requirements

- **Measurement and Verification of On Peak and Seasonal Resources**
  - Lead market participant must "demonstrate both availability and performance… in reducing demand" for On Peak and Seasonal Peak Resources
    - Exact method depends on the resource's specific capabilities and attributes
    - Procedure and demonstration options are outlined in ISO New England's Manual M-MVDR
  - Submitted Measurement and Verification documentation forms the basis of estimated load reductions, must be approved by ISO-NE

- **Audit Requirements (from Manual M-MVDR)**
  - Performance for measures without interval meters may be based on estimated hourly data or stipulated performance data to establish the Average Hourly Load Reduction
  - Both On Peak and Seasonal Peak resources must complete at least one audit per season

# Future Market Structures: Distributed Energy Resource Aggregations

- Order 2222 creates pathways for Distributed Energy Resource Aggregations (DERA) to participate in the ISO-NE markets
  - A Distributed Energy Resource (DER) is located on the distribution system
  - A DER can inject energy, withdraw energy, regulate, and/or reduce demand
- Order 2222 creates new participation models and modifies existing models
  - New Energy and Ancillary Services Markets participation models
    - Settlement Only Distributed Energy Resource Aggregation (SODERA)
    - Demand Response Distributed Energy Resource Aggregation (DRDERA)
  - New Capacity Market participation models
    - Distributed Energy Capacity Resource (DECR)
- ISO-NE's Order 2222 Compliance Proposal is effective November 1, 2026
  - For more information, see ISO-NE's Order No. 2222 Key Project webpage

# Questions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