

# Demand-side Energy Management in New England

A Guide to Earning Revenue by Reducing Demand During  
Critical Periods

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# How will curtailing energy affect your business?

- CPower has a team of energy experts who live and work in New England and will help you develop your energy curtailment strategy and maximize your demand response participation.
- Your CPower Team will perform a complete assessment of your facilities to understand your energy needs, usage and load profile.
- We'll work with you to develop and fine tune an energy curtailment strategy that suits your specific business needs.
- We'll then identify where your organization can cut back on energy and still meet the needs of day-to-day business.
- Once your customized strategy is in place, your CPower Team continues to work closely with you to refine your energy management efforts and maximize your results.

# The Value of Curtailment

- Many demand response programs in New England are provided by Curtailment Service Providers (CSPs), also known as Market Participants, that have been approved by the Independent System Operator of New England (ISO-NE) to provide your demand response participation.
- CSPs are experts at helping organizations like yours maximize your demand response participation.
- Getting the most out of demand response begins with choosing the right CSPs to manage your demand response participation.

## What is a Curtailment Service Provider (CSP)?

- A CSP is a third-party entity (separate from the bulk electric grid operator or risk and utility) that handles the demand response participation of many organizations to ensure effective curtailment takes place when the grid is stressed.
- CSPs ensure safe, efficient energy curtailment that results in larger incentive payments for the participating organization.
- The CSP's mission is to optimize the participant's demand response in a way that minimizes maximizes reward
- As your CSP, CPower will work with your organization to develop a customized curtailment strategy that suits the specific needs of your business.

# Active Demand Capacity Resource (ADCR)

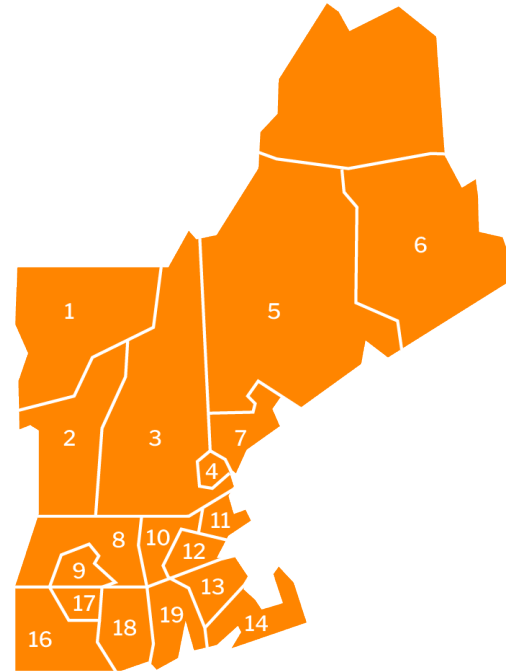
<b>Minimum Size</b>	Minimum load reduction is generally 100kw
<b>Eligibility</b>	Load Reduction through curtailment or permitted distributed generation.
<b>Participation</b>	Summer Season (Jun-Nov, Apr-May) and Winter Season (Dec-Mar) during each Program Year (Jun-May).
<b>Enrollment Deadline</b>	April 15 for start of Summer, October 15 for start of Winter, interim enrollment possible.
<b>Metering</b>	Each account must have a 5-minute interval meter installed by CPower or equivalent.
<b>Number &amp; Duration of Load Response Event(s)</b>	Program in effect year round. Customers typically called 5 hours or less per year
<b>Notification</b>	Customers will receive dispatch notices 30 minutes prior to an event via email, phone, and/or text per customers contracted instructions.
<b>Testing</b>	At a minimum, a 90-minute test event will be called twice per year (once per season).
<b>Compliance</b>	Customers must meet their performance obligations during events and test events.
<b>Consequences of Non-Performance</b>	Customer payments will be reduced proportionately to their actual performance.
<b>Capacity Payments</b>	Monthly payment (\$/kW) based on the annual Forward Capacity Auction price and customers' demonstrated ability to curtail.
<b>Energy Payments</b>	Payment (\$/kWh) made at prevailing real-time hourly energy prices for all kWh curtailed from baseline usage during events and test events.
<b>Settlements</b>	Customers receive quarterly payments

# ADCR Event History

2019-2023

Year	# of Events	Hours
2019	0	0
2020	0	0
2021	0	0
2022	1	2
2023	3	8.30

## ISO-NE Dispatch Zones



- 1 • Northwest Vermont
- 2 • Vermont
- 3 • New Hampshire
- 4 • Seacoast
- 5 • Maine
- 6 • Bangor Hydro
- 7 • Portland ME
- 8 • Western MA
- 9 • Springfield MA
- 10 • Central MA
- 11 • North Shore
- 12 • Boston
- 13 • SEMA
- 14 • Lower SEMA
- 15 • Norwalk-Stamford
- 16 • Western CT
- 17 • Northern CT
- 18 • Eastern CT
- 19 • Rhode Island

# Passive (On-Peak) Demand Response

- Offered by ISO-NE to help alleviate grid stress, On-Peak Demand Response rewards participating organizations for making permanent load reductions.
- Unlike ADCR, these resources perform as they normally do for the host customers but are rewarded for load they permanently remove from the electric grid during defined peak performance hours in summer and winter. Eligible behind-the-meter resources include solar, fuel cells, co-generation systems, combined heat and power systems (CHP), and any energy efficiency project that permanently reduces demand on the electric grid.
- Passive Demand Response participants are compensated for their reduced electricity consumption during both the summer and winter peak hours.

# Passive (On-Peak) Demand Response

<b>Minimum Size</b>	Minimum load reduction is generally 100kw
<b>Eligibility</b>	Energy Efficiency projects and Distributed Generation including renewables contributing load reduction during performance hours.
<b>Participation</b>	Summer Season (Jun-Nov, Apr-May) and Winter Season (Dec-Mar) during each Program Year (Jun-May).
<b>Enrollment Deadline</b>	April 15 for start of Summer, October 15 for start of Winter, interim enrollment possible.
<b>Metering</b>	Requirements vary by project type. In some cases metering is not required..
<b>On-Peak Performance Period</b>	Permanent demand reductions will be measured during On-Peak Hours which are: <ul style="list-style-type: none"><li>•1 to 5 p.m. (Eastern Prevailing Time) during the Summer Performance Months (Jun-Aug)</li><li>•5 to 7 p.m. (Eastern Prevailing Time) during the Winter Performance Months (Dec-Jan)</li></ul> Performance during Performance Months shall set payments for all remaining months in the corresponding season.
<b>Performance Data Reporting</b>	CPower will submit monthly performance data to ISO-NE. Customer or designated 3rd party may provide interval data to CPower if metering not installed or read directly by CPower.
<b>Capacity Payments</b>	Monthly payment (\$/kW) based on the annual Forward Capacity Auction price and customers' demonstrated average hourly demand reduction during On-Peak Hours.
<b>Settlements</b>	Customers receive payments 90 days after each calendar quarter.
<b>Compliance</b>	Customers must meet their performance obligations during On-Peak Hours.
<b>Consequences of Non-Performance</b>	Customer payments will be reduced proportionately to their actual performance.

# Forward Capacity Prices

as determined by annual auctions, published ISO-NE

## Gross Capacity Values

\$/MW Year

YEAR	Zone	Capacity Value
2023-24	ALL	\$24,000
2024-25	NEMA, SEMA, RI	\$47,760
2024-25	NH, VT, and ME	\$29,760
2024-25	Rest-of-Pool	\$31,320
2025-26	NEMA, SEMA, RI	\$31,680
2025-26	NH, VT, ME	\$30,360
2025-26	Rest-of-Pool	\$31,080
2026-27	ALL	\$31,080



# Utility Demand Response Programs

- National Grid, Eversource, Rhode Island Energy, Unitil, Liberty Utilities and Cape Light Compact offer several Connected Solutions programs to reduce demand on the New England electric grid during the late afternoon on the hottest days of the year, when the regional peak hourly demands occur. To help keep their grid healthy and reliable, these utilities offer Connected Solutions, a demand response program now in its fifth year that pays businesses to use less energy during peak demand periods.
- Efficiency Maine offers the Demand Response Initiative that also strives to reduce demand on the electric grid during the hottest days of the summer.
- These utilities have chosen CPower to facilitate your participation in their demand response programs and to help optimize your demand response participation.

# Connected Solutions TARGETED DISPATCH

<b>Minimum Size</b>	Minimum load reduction is generally 50kw
<b>Participation</b>	Summer Season (Jun-Sept), Optional Winter Season (Dec-March).
<b>Number &amp; Duration of Events</b>	Summer Season: 3-hour event duration, 4-6 events expected, event window is 3-8 pm weekdays.
<b>Notification</b>	Day-ahead notification of DR events based on the system peak load forecast
<b>Program Value</b>	Summer: \$35 / kW * Seasonal performance average. (\$25 / kW for Liberty ; \$45/ kW for Unitil NH); (Unitil weekend: \$10 /kW) Winter: \$25 / kW * Seasonal performance average.
<b>Settlements</b>	Settled on hourly performance results, paid at end of season.
<b>Compliance</b>	Pay for performance. Average performed curtailment (kW) across all events for the entire season.
<b>Consequences of Non-Performance</b>	Customer payments will be reduced proportionately to their actual performance.
<b>Testing</b>	No performance test.
<b>Enrollment Deadline</b>	May 31st for Summer Season
<b>Metering</b>	Interval Meter required.
<b>Eligibility</b>	Load reduction through curtailment and permitted generation.

# Efficiency Maine DEMAND RESPONSE INITIATIVE

<b>Minimum Size</b>	Minimum load reduction is generally 50kw
<b>Participation</b>	Summer Season (Jun-Sept)
<b>Number &amp; Duration of Events</b>	Summer Season: 3-hour event duration, 4-6 events expected, event window is 2pm – 7pm weekdays.
<b>Notification</b>	Day-ahead notification of DR events based on the system peak load forecast
<b>Program Value</b>	Summer: \$35 / kW * Seasonal performance average.
<b>Settlements</b>	Settled on hourly performance results, paid at end of season.
<b>Compliance</b>	Pay for performance. Average performed curtailment (kW) across all events for the entire season.
<b>Consequences of Non-Performance</b>	Customer payments will be reduced proportionately to their actual performance.
<b>Testing</b>	No performance test.
<b>Enrollment Deadline</b>	May 31st for Summer Season
<b>Metering</b>	Interval Meter required.
<b>Eligibility</b>	Load reduction through curtailment and permitted generation.

# Connected Solutions DAILY DISPATCH

<b>Minimum Size</b>	Minimum load reduction is generally 50kw
<b>Participation</b>	Summer Season (Jun-Sept), most events in July and August.
<b>Number &amp; Duration of Events</b>	2- or 3-hour event duration, 40 events expected, maximum of 60, event window is 3pm – 8pm weekdays and weekends.
<b>Notification</b>	Day-ahead notification of DR events based on the system peak load forecast.
<b>Program Value</b>	Massachusetts and Connecticut: \$200 / kW * Seasonal performance average. Rhode Island: \$300 / kW * Seasonal performance average. New Hampshire: Eversource: \$200 / kW * Seasonal performance average.
<b>Baseline (CBL)</b>	Battery output (baseline calculation is available for non-battery participation in National Grid)
<b>Settlements</b>	Settled on hourly performance results, paid at end of season.
<b>Compliance</b>	Pay for performance. Average performed curtailment (kW) across all events for the entire season.
<b>Consequences of Non-Performance</b>	Program is voluntary. Customer payments will be reduced proportionately to their actual performance.
<b>Testing</b>	No performance test.
<b>Enrollment Deadline</b>	May 31st for Summer Season
<b>Metering</b>	Interval Meter required. State-of-charge, charge and recharge telemetry needed for battery storage.
<b>Eligibility</b>	National Grid Customers: Massachusetts and Rhode Island. Battery storage, permitted generation, or load curtailment Liberty Customers: New Hampshire. Battery storage required. Cape Light Compact Customers: Massachusetts. Battery storage required. Eversource Customers: Massachusetts, Connecticut and New Hampshire. Battery storage required. Unitil Customers: Massachusetts. Battery storage required.

# Connected Solutions - Targeted Dispatch

Summer Events	Number of Events – Targeted Dispatch			
Year	Eversource	CapeLight	NGrid	Unitil
2018	-	-	2	-
2019	3	3	1	1
2020	3	3	3	3
2021	5	4	6	5
2022	6	6	6	6
2023	6	6	6	6