

# Memorandum

**TO:** RNCREC, HELIOS  
**FROM:** TIM WOOLF, SYNAPSE  
**DATE:** JULY 15, 2021  
**RE:** **COST AND PRICE ESTIMATES FOR DEMAND RESPONSE SERVICES**

## Introduction

At the hearings I attended on July 9, I offered to provide some readily available information on the costs and prices of demand response in other jurisdictions. This memo presents my findings.

Note that the results for the wholesale markets (New England and PJM) are the clearing prices for all supply-side and demand-side resources that bid into the capacity auction. This means that some of the DR resources might cost less than the clearing prices shown here. Also note that DR (and other) providers typically expect to receive clearing prices from the markets for several years, and these clearing prices can change over time. In sum, the clearing prices below are only a rough indication of the cost of providing DR resources.

Also note that the New England, PJM, and California prices are for a single year of DR delivery.

Also note that in all cases the figures are in US dollars.

## New England

The results below are from the recent Forward Capacity Market (FCM) auction held by ISO-New England. In this auction, 678 MW of demand response cleared the market.

Zone	Clearing Price (\$/kW-month)	Clearing Price (\$/kW-year)	Source
NNE	2.4	29.7	<a href="https://www.iso-ne.com/markets-operations/markets/forward-capacity-market/">https://www.iso-ne.com/markets-operations/markets/forward-capacity-market/</a>
SENE	4.0	47.8	
Rest of Pool	2.6	31.3	

*The clearing prices are in terms of \$/kW-month. These are converted into \$/kW-year by multiplying by 12.*

## PJM

The results below are from the recent PJM Reliability Pricing Model (RPM) Base Residual Auction (BRA) for resources to be procured in 2022/2023. In this auction, 8,812 MW of DR was procured.

Note that these are the clearing prices for all supply-side and demand-side resources that bid into the capacity auction. This means that some of the DR resources might cost less than the clearing prices shown here. Also note that DR (and other) providers typically expect to receive clearing prices for several years, and these clearing prices can change over time. In sum, the clearing prices below are only a rough indication of the cost of providing DR resources.

Zone	Clearing Price (\$/MW-day)	Clearing Price (\$/kW-year)	Source
Rest of RTO	50.0	18.3	<a href="https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2022-2023/2022-2023-base-residual-auction-report.ashx">https://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2022-2023/2022-2023-base-residual-auction-report.ashx</a>
MAAC	95.8	35.0	
EMAAC	97.9	35.7	
BGE	126.5	46.2	
COMED	69.0	25.2	
DEOK	71.7	26.2	

*The clearing prices are in terms of \$/MW-day. These are converted into \$/kW-year by multiplying by 365 and dividing by 1000.*

## California

The table below provides a summary of the payments that the California utilities are currently offering for demand response programs.

Utility	Program	Payment (\$/kW-month)	Payment (\$/kW-year)	Notes	Source
Pacific Gas & Electric	Base Interruptible Program	9.5 – 10.5	114 - 126	Payments vary by customer size	<a href="https://www.pge.com/en_US/large-business/save-energy-and-money/energy-management-programs/demand-response-programs/base-interruptible/base-interruptible.page?WT.mc_id=Vanity_bip">https://www.pge.com/en_US/large-business/save-energy-and-money/energy-management-programs/demand-response-programs/base-interruptible/base-interruptible.page?WT.mc_id=Vanity_bip</a>
Southern California Edison	Base Interruptible Program	0.7 – 26.1	8 – 313	Payments vary by customer size and month	<a href="https://library.sce.com/content/dam/sce-doelib/public/regulatory/tariff/electric/schedules/general-service-&amp;-industrial-rates/ELECTRIC_SCHEDULES_TOU-BIP.pdf">https://library.sce.com/content/dam/sce-doelib/public/regulatory/tariff/electric/schedules/general-service-&amp;-industrial-rates/ELECTRIC_SCHEDULES_TOU-BIP.pdf</a>
Southern California Edison	Capacity Bidding Program	1.7 - 27.0	20 – 234	Payments vary by month	<a href="https://library.sce.com/content/dam/sce-doelib/public/regulatory/tariff/electric/schedules/other-rates/ELECTRIC_SCHEDULES_CBP.pdf">https://library.sce.com/content/dam/sce-doelib/public/regulatory/tariff/electric/schedules/other-rates/ELECTRIC_SCHEDULES_CBP.pdf</a>

*The clearing prices are in terms of \$/kW-month. These are converted into \$/kW-year by multiplying by 12.*

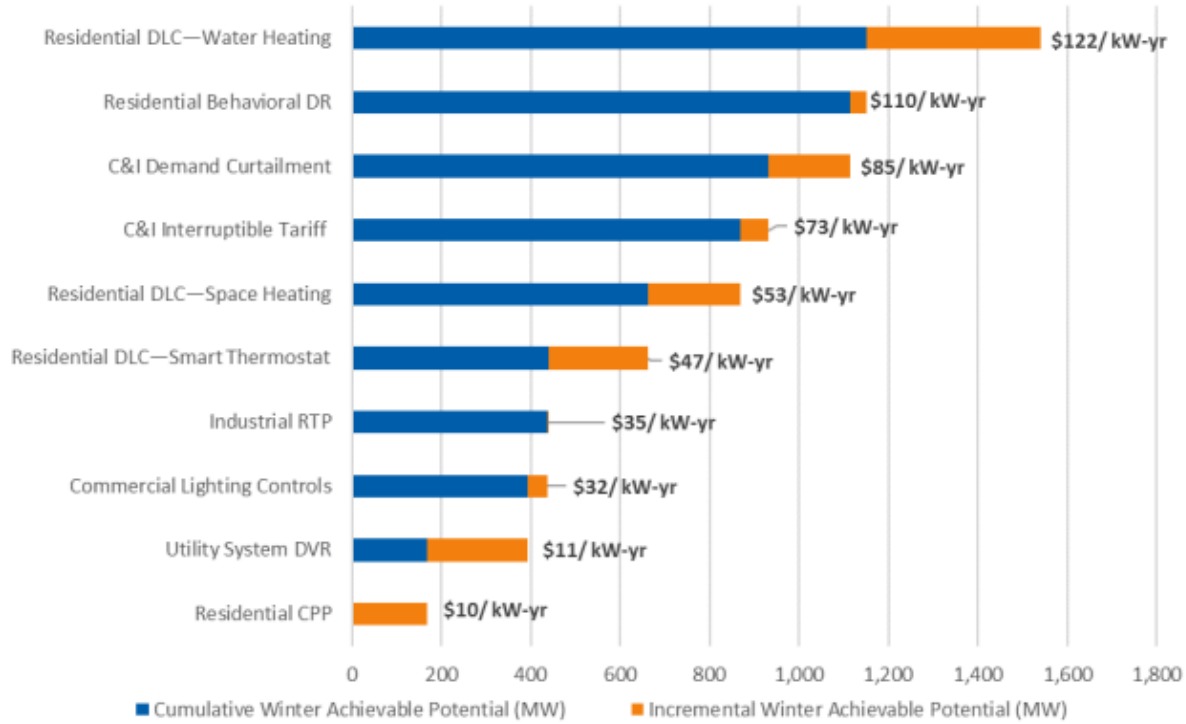
## Bonneville Power Authority

In 2018 Cadmus prepared an estimate of the potential demand response available to the Bonneville Power Authority. The results are presented in the two figures below. The first table presents the results for the winter peak period and the second presents the results for the summer peak period.

These figures are taken directly from: Cadmus, *Demand Response Potential in Bonneville Power Administration's Public Utility Service Area*, Final Report, prepared for the Bonneville Power Authority,



**Figure 1. 20-Year Base Achievable Potential Supply Curve for DR, Winter Peak, with Levelized Costs**



**Figure 2. 20-Year Base Achievable Potential Supply Curve for DR, Summer Peak, with Levelized Costs**

