

ComEd Behavior - Res/IE Program Impact Evaluation Report

Energy Efficiency/Demand Response Plan:
Program Year 2023 (CY2023)
(1/1/2023-12/31/2023)

Prepared for:

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Introduction

This report presents the results of the impact evaluation of the Residential Behavior Program from the program year from January 1 to December 31, 2023 (CY2023). The program was designed to generate energy savings by providing residential customers with information about energy use and conservation strategies. Program participants receive information from regularly mailed and emailed home energy reports.

Program Savings Detail

Table 1 summarizes the incremental energy and demand savings the Residential Behavior Program achieved in CY2023. Since the randomized control trial (RCT) design of the Residential Behavior Program inherently estimates net savings, neither the evaluation team nor the implementer estimated gross savings and there is no gross realization rate or net-to-gross ratio. Similarly, the RCT cannot identify specific measures that produce savings and so cannot calculation electrification savings and it is based on electricity consumption and so cannot calculate savings from other fuels.

Table 1. Total Annual Incremental Electric Savings - Total

Savings Category	Units	Ex Ante Gross Savings*	Program Gross Realization Rate	Verified Gross Savings*	Program Net-to-Gross Ratio (NTG)	CY2021 Net Carryover Savings	CY2022 Net Carryover Savings	Verified Net Savings†
Electric Energy Savings - Direct‡	kWh							82,444,452
Electric Energy Savings - Converted from Other Fuels§	kWh							0
Electric Energy Savings - Electrification	kWh							0
Total Electric Energy Savings#	kWh							82,444,452
Total Electric Energy Savings Including Carryover#	kWh							N/A
Summer Peak*†† Demand Savings	kW							14,230
Summer Peak*†† Demand Savings Including Carryover	kW							N/A

All gross savings columns are intentionally blank as the RCT design inherently estimates net savings and therefore neither the evaluation team nor the implementer estimated gross savings.

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

* The "Ex Ante Gross Savings" and "Verified Gross Savings" in row one (Electric Energy Savings - Direct) and row six (Summer Peak Demand Savings) exclude gross carryover savings from CY2021 and CY2022.

† The "Verified Net Savings" in row one excludes carryover savings as they don't apply to this program.

‡ The Electric Energy Savings - Direct includes primary kWh savings from efficient measures (includes efficiency savings from electrification measures but excludes the electrification savings), secondary kWh savings from wastewater treatment, and electric heating penalties.

|| Electrification savings excluding direct efficiency savings. Calculated from net electric savings from increase in kWh consumption and decrease in gas consumption from electrification (kWh equivalent).

Total Electric Energy Savings is the sum of the Electric Energy Savings - Direct, the Electric Energy Savings Converted from Other Fuel, and the Electrification Savings.

*† The Peak Demand Savings are savings occurring at coincident Summer Peak period, defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August. This definition is in accordance with PJM requirement.

Source: Evaluation team analysis

Table 2 provides the detailed adjustments made to arrive at the final verified net savings for CY2023 and reports the program net realization rate. Of the modeled savings, 4% are from uplift into other ComEd energy efficiency programs and over half (59%) are attributable to prior program years. After the uplift and

persistence adjustments, the program achieved a net realization rate of 1.40. The difference in savings is driven by adjustments after the modeling (i.e., uplift and persistence) as the ex ante savings before adjustments are 218,606,000 kWh which is less than 2% different than the evaluation team's modeled savings. Differences in the persistence savings adjustments are the main contributor to a realization rate greater than 1. The evaluation team does not have the information required to identify and verify the sources of the discrepancy in more detail.

Table 2. Total Program Net Electric Savings - Total

Savings Category	Energy Savings (kWh)
Ex Ante Net Savings	58,698,000
Modeled Savings	222,150,275
Current Year Uplift Adjustment	(612,559)
Legacy Uplift Adjustment	(8,140,635)
Verified Unadjusted Net Savings	213,397,081
Persistence Adjustment	(130,952,629)
Final Verified Net Savings	82,444,452
Program Net Realization Rate	1.40

Source: Evaluation team analysis

Cumulative Persisting Annual Savings

Table 3 shows the cumulative persisting annual savings (CPAS) for the measures installed in CY2023.

Table 3. CPAS – Electric

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings											
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
CY2023 Program Total Contribution to CPAS		291,987,668							82,444,452	60,088,959	43,916,492	31,626,513	23,273,815	17,054,219
Historic Program Total Contribution to CPAS‡			279,539,772	255,950,948	240,435,808	249,725,611	259,799,415	146,044,389	85,371,813	47,565,697	26,318,673	18,524,078	13,192,976	
Program Total CPAS		291,987,668	279,539,772	255,950,948	240,435,808	249,725,611	259,799,415	228,488,841	145,460,772	91,482,189	57,945,186	41,797,893	30,247,195	
CY2023 Program Incremental Expiring Savings§									22,355,493	16,172,467	12,289,979	8,352,698	6,219,595	
Historic Program Incremental Expiring Savings								113,755,026	60,672,576	37,806,116	21,247,024	7,794,595	5,331,102	
Program Total Incremental Expiring Savings#								113,755,026	83,028,069	53,978,583	33,537,003	16,147,293	11,550,697	

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings											
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
CY2023 Program Total Contribution to CPAS		291,987,668	12,646,902	9,255,602	6,732,685	4,948,028	0	0	0	0	0	0	0	0
Historic Program Total Contribution to CPAS‡			9,271,794	6,475,833	4,569,163	0	0	0	0	0	0	0	0	0
Program Total CPAS		291,987,668	21,918,696	15,731,435	11,301,848	4,948,028	0	0	0	0	0	0	0	0
CY2023 Program Incremental Expiring Savings§			4,407,317	3,391,300	2,522,917	1,784,656	4,948,028	0	0	0	0	0	0	0
Historic Program Incremental Expiring Savings			3,921,182	2,795,961	1,906,670	4,569,163	0	0	0	0	0	0	0	0
Program Total Incremental Expiring Savings#			8,328,499	6,187,261	4,429,587	6,353,819	4,948,028	0	0	0	0	0	0	0

All gross savings columns are intentionally blank as the RCT design inherently estimates net savings and therefore neither the evaluation team nor the implementer estimated gross savings.

† Lifetime savings are the sum of CPAS savings through the EUL.

‡ Historical savings go back to CY2018.

§ Incremental expiring savings are equal to CPAS Yn-1 - CPAS Yn.

|| Historic incremental expiring savings are equal to Historic CPAS Yn-1 – Historic CPAS Yn.

Program total incremental expiring savings are equal to current year total incremental expiring savings plus historic total incremental expiring savings.

Source: Evaluation team analysis