

# ComEd Incentives Program Impact Evaluation Report

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

**Prepared for:**

**ComEd**

**FINAL**

**April 19, 2024**

Prepared by:

Kumar Chittory  
Verdant

Kyle McKenna  
EcoMetric

Ryan Kroll  
Driftless Energy



**VERDANT**



**Submitted to:**

ComEd  
2011 Swift Drive  
Oak Brook, IL 60523

**Submitted by:**

Guidehouse Inc.  
150 N. Riverside Plaza, Suite 2100  
Chicago, IL 60606

**Contact:**

Charles Maglione, Partner  
703.431.1983  
[cmaglione@guidehouse.com](mailto:cmaglione@guidehouse.com)

Jeff Erickson, Director  
608.616.4962  
[jeff.erickson@guidehouse.com](mailto:jeff.erickson@guidehouse.com)

Nishant Mehta, Associate Director  
608.616.5823  
[nishant.mehta@guidehouse.com](mailto:nishant.mehta@guidehouse.com)

This report was prepared by Guidehouse for ComEd. The work presented in this report represents Guidehouse's professional judgment based on the information available at the time this report was prepared. Use of this report by any other party for whatever purpose should not, and does not, absolve such party from using due diligence in verifying the report's contents. Neither Guidehouse nor any of its subsidiaries or affiliates assumes any liability or duty of care to such parties, and hereby disclaims any such liability.

## Table of Contents

<b>Introduction .....</b>	<b>1</b>
<b>Program Savings Detail .....</b>	<b>1</b>
<b>Cumulative Persisting Annual Savings .....</b>	<b>4</b>

## List of Tables and Figures

Figure 1. Verified Net Savings by Measure – Electric.....	2
Table 1. Total Annual Incremental Electric Savings - Total.....	1
Table 2. CPAS – Electric.....	4
Table 3. CPAS – Other Fuel (Gas + Propane) .....	4
Table 4. CPAS – Total .....	5

## Introduction

This report presents the results of the impact evaluation of the Incentives program for the program year from January 1 to December 31, 2023 (CY2023). The program was designed to provide monetary incentives to business and public sector customers that installed qualified EE improvements in their facilities. The incentive is offered on either a fixed per-unit basis (“standard”) or determined based on the calculated annual energy savings (“custom”). Standard measures have savings algorithms based on the IL-TRM. Custom measures are not in the IL-TRM and are identified and implemented based on site-specific factors. ComEd provides technical assistance for select projects to assist in the evaluation and implementation of custom EE projects.

## Program Savings Detail

Table 1 summarizes the incremental energy and demand savings the Incentives Program achieved in CY2023. The gas or other fuel savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim, either via joint or non-joint programs.<sup>1</sup> The electrification savings are those resulting from HVAC Controls measures.<sup>2</sup>

**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	225,342,409	0.94	212,558,739	0.92			195,436,486
Electric Energy Savings - Converted from Other Fuel§	kWh	77,163,702	0.46	35,778,549	0.89			31,846,129
Electric Energy Savings - Electrification	kWh	117,569	0.88	103,145	0.53			54,667
Total Electric Energy Savings#	kWh	302,623,681	0.82	248,440,434	0.92			227,337,282
Total Electric Energy Savings Including Carryover#	kWh	302,623,681	0.82	248,440,434	0.92			227,337,282
Summer Peak*† Demand Savings	kW	40,640	0.96	39,204	0.94			36,801
Summer Peak*† Demand Savings Including Carryover	kW	40,640	0.96	39,204	0.94			36,801

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 and row six 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.

§ Gas savings converted to kWh by multiplying Therms \* 29.31 (which is based on 100,000 Btu/Therm and 3,412 Btu/kWh) and/or propane savings converted to kWh by multiplying Gallons \* 26.77 (which is based on 91,333

<sup>1</sup> The evaluation will determine which other fuel savings will be counted toward goal while producing the portfolio-wide Summary Report. According to Section 8-103B(b-25) of the Illinois Public Utilities Act, “In no event shall more than 10% of each year’s applicable annual total savings requirement as defined in paragraph (7.5) of subsection (g) of this Section be met through savings of fuels other than electricity.”

<sup>2</sup> The evaluation team will determine which electrification savings will be counted toward ComEd’s electric savings goal while producing the portfolio-wide Summary Report. According to Section 8-103B(b-27) of the Illinois Public Utilities Act, “In no event shall electrification savings counted toward each year’s applicable annual total savings requirement, as defined in paragraph (7.5) of subsection (g) of this Section, be greater than 5% per year for each year from 2022 through 2025.”

Btu/Gallon and 3,412 Btu/kWh). The evaluation team will determine which other fuel savings will be converted to kWh and counted toward ComEd's electric savings goal while producing the portfolio-wide Summary Report.

|| 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. Note: This row does not include carryover gross savings, but the next one includes carryover verified gross savings, for the purpose of recalculating the gross realization rate resulting from including carryover savings (same for the peak demand savings).

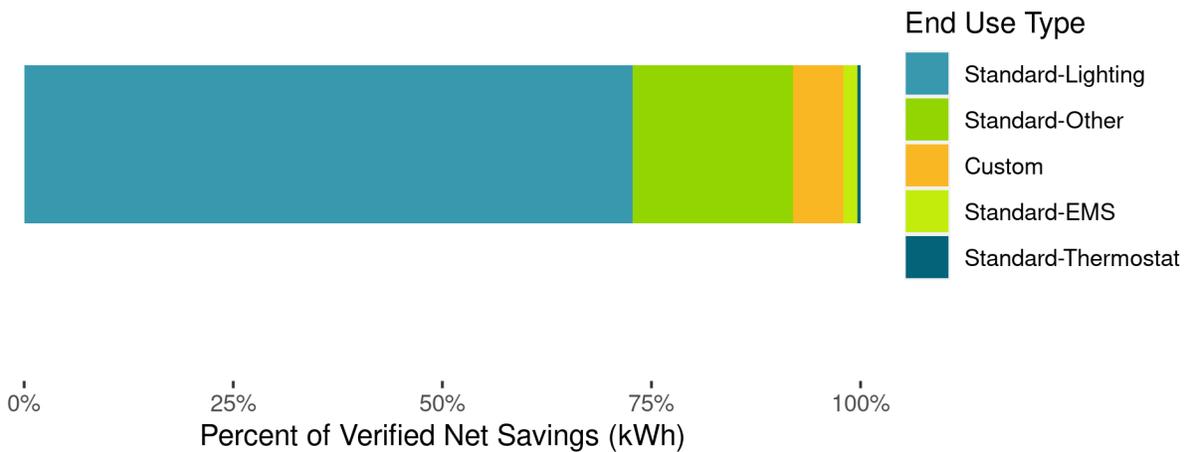
\*† The Peak Demand Savings are savings occurring at coincident Summer Peak period, defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August. This definition is in accordance with PJM requirement.

Note: The program-level NTG values are calculated as Verified Net/Verified Gross. The program-level analysis typically used measure-level deemed NTG values, which are listed here: <https://www.ilsag.info/evaluator-ntg-recommendations-for-2023>.

Source: Evaluation team analysis

Figure 1 shows the electric energy savings by measure end use. It includes measure efficiency savings, carryover kWh, secondary water kWh, and electrification savings. It does not include other fuel savings converted to kWh.

**Figure 1. Verified Net Savings by Measure – Electric**



Source: Evaluation team analysis

## Cumulative Persisting Annual Savings

Table 2 to Table 4 show the cumulative persisting annual savings (CPAS) for the measures installed in CY2023. The electric CPAS across all measures installed in 2023 is shown in Table 2. The gas and other fuel contribution to CPAS (converted to equivalent electricity) are shown in Table 3. The combined savings are shown in Table 4.

**Table 2. 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	212,661,884	2,717,601,431						195,491,153	195,491,153	194,855,966	193,943,057	193,541,743	192,289,797
Historic Program Total Contribution to CPAS‡			225,644,015	430,481,783	697,448,458	916,267,005	1,119,518,690	1,114,481,968	1,103,421,147	1,093,433,808	1,075,722,741	1,029,053,395	939,951,713
Program Total CPAS	212,661,884	2,717,601,431	225,644,015	430,481,783	697,448,458	916,267,005	1,119,518,690	1,309,973,121	1,298,912,300	1,288,289,774	1,269,665,797	1,222,595,138	1,132,241,510
CY2023 Program Incremental Expiring Savings§								0	635,187	912,910	401,313	1,251,946	
Historic Program Incremental Expiring Savings								5,036,722	11,060,820	9,987,339	17,711,067	46,669,345	89,101,682
Program Total Incremental Expiring Savings#								5,036,722	11,060,820	10,622,526	18,623,977	47,070,659	90,353,628

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	212,661,884	2,717,601,431	188,491,639	185,639,669	184,758,694	184,221,448	171,342,506	140,718,895	124,491,602	115,280,902	112,412,898	22,155,822	22,093,866
Historic Program Total Contribution to CPAS‡			893,661,202	813,194,067	702,138,941	582,373,023	423,545,860	337,252,695	243,247,037	163,874,233	92,282,035	77,270,765	76,223,598
Program Total CPAS	212,661,884	2,717,601,431	1,082,152,842	998,833,736	886,897,634	766,594,472	594,888,366	477,971,590	367,738,639	279,155,135	204,694,932	99,426,587	98,317,464
CY2023 Program Incremental Expiring Savings§			3,798,157	2,851,970	880,975	537,245	12,878,942	30,623,611	16,227,293	9,210,700	2,868,004	90,257,076	61,955
Historic Program Incremental Expiring Savings			46,290,511	80,467,135	111,055,127	119,765,917	158,827,163	86,293,165	94,005,658	79,372,804	71,592,198	15,011,270	1,047,167
Program Total Incremental Expiring Savings#			50,088,668	83,319,106	111,936,102	120,303,163	171,706,106	116,916,776	110,232,951	88,583,504	74,460,202	105,268,346	1,109,122

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings											
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
CY2023 Program Total Contribution to CPAS	212,661,884	2,717,601,431	21,822,332	21,045,322	21,045,322	12,717,577	11,419,401	11,419,401	595,609	315,657	0	0	0	
Historic Program Total Contribution to CPAS‡			70,817,886	56,287,371	29,464,750	18,121,620	11,815,901	2,664,841	1,253,569	0	0	0	0	
Program Total CPAS	212,661,884	2,717,601,431	92,640,218	77,332,693	50,510,072	30,839,197	23,235,302	14,084,242	1,849,178	315,657	0	0	0	
CY2023 Program Incremental Expiring Savings§			271,535	777,010	0	8,327,745	1,298,176	0	10,823,793	279,952	315,657	0	0	
Historic Program Incremental Expiring Savings			5,405,712	14,530,514	26,822,621	11,343,130	6,305,719	9,151,060	1,411,272	1,253,569	0	0	0	
Program Total Incremental Expiring Savings#			5,677,247	15,307,524	26,822,621	19,670,875	7,603,895	9,151,060	12,235,065	1,533,521	315,657	0	0	

† 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

**Table 3. CPAS – Other Fuel (Gas + Propane)**

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	CPAS Verified Net Therms Savings											
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
CY2023 Program Total Other Fuel Contribution to CPAS (Therms)	1,220,694	16,119,666							1,086,528	1,086,528	1,086,528	1,086,528	1,086,528	1,083,020
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	35,778,549	472,467,415							31,846,129	31,846,129	31,846,129	31,846,129	31,846,129	31,743,308
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			52,340,931	69,173,843	183,880,111	245,420,589	280,739,731	280,739,731	280,739,731	280,571,488	280,571,341	280,570,968	279,101,228	
Program Total Other Fuel CPAS (kWh Equivalent)	35,778,549	472,467,415	52,340,931	69,173,843	183,880,111	245,420,589	280,739,731	312,585,860	312,585,860	312,417,618	312,417,470	312,417,097	310,844,536	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)									0	0	0	0	3,508	
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)									0	0	0	0	102,821	
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#									0	0	168,243	147	373	1,469,741
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†									0	0	168,243	147	373	1,572,562

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	CPAS Verified Net Therms Savings										
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2023 Program Total Other Fuel Contribution to CPAS (Therms)	1,220,694	16,119,666	1,083,020	1,083,020	1,083,020	1,083,020	1,058,123	1,053,451	1,053,451	1,053,451	1,053,451	0	0
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	35,778,549	472,467,415	31,743,308	31,743,308	31,743,308	31,743,308	31,013,587	30,876,661	30,876,661	30,876,661	30,876,661	0	0
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			278,294,394	277,673,611	276,904,089	276,002,621	225,201,600	209,175,521	95,638,312	35,603,262	2,714,115	2,714,115	2,714,115
Program Total Other Fuel CPAS (kWh Equivalent)	35,778,549	472,467,415	310,037,702	309,416,919	308,647,397	307,745,929	256,215,187	240,052,182	126,514,972	66,479,923	33,590,775	2,714,115	2,714,115

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	0	24,897	4,672	0	0	0	1,053,451	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	0	729,721	136,927	0	0	0	30,876,661	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			806,834	620,783	769,523	901,468	50,801,021	16,026,078	113,537,210	60,035,050	32,889,147	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			806,834	620,783	769,523	901,468	51,530,742	16,163,005	113,537,210	60,035,050	32,889,147	30,876,661	0

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
CY2023 Program Total Other Fuel Contribution to CPAS (Therms)	1,220,694	16,119,666	0	0	0	0	0	0	0	0	0	0	0
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	35,778,549	472,467,415	0	0	0	0	0	0	0	0	0	0	0
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			2,714,115	1,550,768	23,184	23,184	0	0	0	0	0	0	0
Program Total Other Fuel CPAS (kWh Equivalent)	35,778,549	472,467,415	2,714,115	1,550,768	23,184	23,184	0	0	0	0	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	0	0	0	0	0	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	0	0	0	0	0	0	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			0	1,163,347	1,527,584	0	23,184	0	0	0	0	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			0	1,163,347	1,527,584	0	23,184	0	0	0	0	0	0

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

‡ Fossil fuel savings (from natural gas, propane, etc.) are reported in therms. kWh equivalent savings are calculated by multiplying therms savings by 29.31.

§ 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

**Table 4. CPAS – Total**

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	248,440,434	3,190,068,846							227,337,282	227,337,282	226,702,095	225,789,186	225,387,872	224,033,105
Historic Program Total Contribution to CPAS‡			277,984,946	499,655,626	881,328,569	1,161,687,594	1,400,258,421	1,395,221,699	1,384,160,878	1,374,005,296	1,356,294,082	1,309,624,363	1,219,052,941	
Program Total CPAS	248,440,434	3,190,068,846	277,984,946	499,655,626	881,328,569	1,161,687,594	1,400,258,421	1,622,558,981	1,611,498,160	1,600,707,392	1,582,083,267	1,535,012,236	1,443,086,046	
CY2023 Program Incremental Expiring Savings§									0	635,187	912,910	401,313	1,354,767	
Historic Program Incremental Expiring Savings								5,036,722	11,060,820	10,155,582	17,711,214	46,669,718	90,571,422	
Program Total Incremental Expiring Savings#								5,036,722	11,060,820	10,790,769	18,624,124	47,071,032	91,926,190	

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2023 Program Total Contribution to CPAS	248,440,434	3,190,068,846	220,234,947	217,382,977	216,502,002	215,964,756	202,356,093	171,595,555	155,368,262	146,157,562	143,289,558	22,155,822	22,093,866
Historic Program Total Contribution to CPAS‡			1,171,955,596	1,090,867,679	979,043,030	858,375,644	648,747,459	546,428,217	338,885,349	199,477,495	94,996,149	79,984,880	78,937,713
Program Total CPAS	248,440,434	3,190,068,846	1,392,190,544	1,308,250,656	1,195,545,031	1,074,340,400	851,103,553	718,023,772	494,253,611	345,635,057	238,285,708	102,140,702	101,031,579
CY2023 Program Incremental Expiring Savings§			3,798,157	2,851,970	880,975	537,245	13,608,663	30,760,538	16,227,293	9,210,700	2,868,004	121,133,736	61,955
Historic Program Incremental Expiring Savings			47,097,345	81,087,918	111,824,649	120,667,386	209,628,185	102,319,243	207,542,868	139,407,854	104,481,345	15,011,270	1,047,167
Program Total Incremental Expiring Savings#			50,895,502	83,939,888	112,705,624	121,204,631	223,236,848	133,079,781	223,770,161	148,618,554	107,349,349	136,145,006	1,109,122

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
CY2023 Program Total Contribution to CPAS	248,440,434	3,190,068,846	21,822,332	21,045,322	21,045,322	12,717,577	11,419,401	11,419,401	595,609	315,657	0	0	0
Historic Program Total Contribution to CPAS‡			73,532,000	57,838,139	29,487,934	18,144,804	11,815,901	2,664,841	1,253,569	0	0	0	0
Program Total CPAS	248,440,434	3,190,068,846	95,354,332	78,883,461	50,533,256	30,862,381	23,235,302	14,084,242	1,849,178	315,657	0	0	0
CY2023 Program Incremental Expiring Savings§			271,535	777,010	0	8,327,745	1,298,176	0	10,823,793	279,952	315,657	0	0
Historic Program Incremental Expiring Savings			5,405,712	15,693,861	28,350,205	11,343,130	6,328,904	9,151,060	1,411,272	1,253,569	0	0	0
Program Total Incremental Expiring Savings#			5,677,247	16,470,871	28,350,205	19,670,875	7,627,079	9,151,060	12,235,065	1,533,521	315,657	0	0

† 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