



# ComEd Incentives Program Impact Evaluation Report

Energy Efficiency/Demand Response Plan:  
Program Year 2022 (CY2022)  
(1/1/2022-12/31/2022)

Prepared for:

ComEd

**FINAL**

April 21, 2023

Prepared by:

Kumar Chittory  
Verdant Associates

Mike Frischmann  
EcoMetric Consulting



[guidehouse.com](http://guidehouse.com)

**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  
[cmaaglione@guidehouse.com](mailto:cmaaglione@guidehouse.com)

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

Adam Knickelbein, Director  
303.493.5483  
[adam.knickelbein@guidehouse.com](mailto:adam.knickelbein@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

Introduction .....	1
Program Savings Detail .....	1
Cumulative Persisting Annual Savings .....	2

## List of Figures and Tables

Figure 1. Verified Net Savings by End Use Type – Electric .....	2
Table 1. Total Annual Incremental Electric Savings – Total .....	1
Table 2. CPAS – Electric .....	3
Table 3. CPAS – Gas .....	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, 2022 (CY2022). 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 CY2022. The gas 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>

**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)	CY2020 Net Carryover Savings	CY2021 Net Carryover Savings	Verified Net Savings†
Electric Energy Savings - Direct‡	kWh	267,418,286	0.99	265,103,071	0.87			230,272,621
Electric Energy Savings - Converted from Gas§	kWh	64,778,851	0.73	47,268,125	0.89			42,101,226
Electric Energy Savings - Indirect from Fuel Switching (through Electrification)	kWh	0		0				0
Total Electric Energy Savings#	kWh	332,197,137	0.94	312,371,196	0.87			272,373,847
Secondary Water Savings	kWh	0		0				0
Summer Peak*† Demand Savings	kW	39,834	1.00	39,762	0.90			35,830

\* Ex ante and verified gross savings exclude gross carryover savings from CY2020 and CY2021.

† The “Verified Net Savings” in row one (Electric Energy Savings - Direct) excludes carryover savings as they do not apply to this program.

‡ The Electric Energy Savings - Direct includes primary kWh savings from efficient measures (includes efficiency savings from fuel switching measures but excludes the fuel switching 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). The evaluation team will determine which gas savings will be converted to kWh and counted toward ComEd’s electric savings goal while producing the portfolio-wide Summary Report.

|| Electrification savings from fuel switching measures excluding direct efficiency savings calculated from net electric savings from an increase in kWh consumption and decrease in gas consumption from fuel switching (kWh equivalent).

# Total Electric Energy Savings is the sum of the Electric Energy Savings - Direct, the Electric Energy Savings Converted from Gas, and the Electrification Savings from fuel switching.

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

<sup>1</sup> The evaluation will determine which gas 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.”

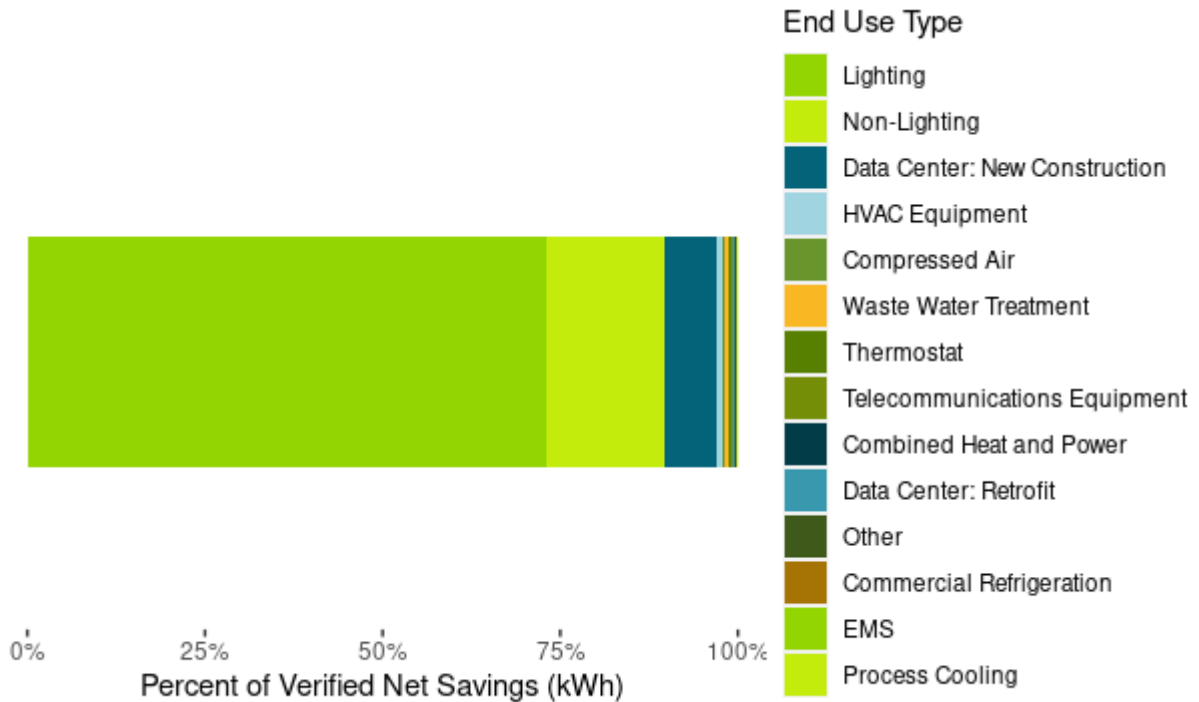
PJM requirement.

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-2022>.

Source: Evaluation team analysis

Figure 1 shows the electric energy savings by measure end use. It does not include gas savings converted to kWh.

**Figure 1. Verified Net Savings by End Use Type – Electric**



Note: Non-Lighting end-use type refers to non-lighting TRM prescriptive measures

Source: Evaluation team analysis

## Cumulative Persisting Annual Savings

Tables 2 to 3 show the cumulative persisting annual savings (CPAS) for the measures installed in CY2022. Table 2 shows the electric CPAS across all measures installed in 2022. Table 3 shows the gas contribution to CPAS (converted to equivalent electricity). Table 4 shows the combined savings.

**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
CY2022 Program Total Contribution to CPAS	265,103,071	3,151,873,525					230,272,621	230,240,227	229,376,344	227,798,618	226,352,583	224,518,869	221,090,132
Historic Program Total Contribution to CPAS‡			225,644,015	430,481,783	697,448,458	916,267,005	915,352,733	910,348,405	900,135,061	891,717,164	875,448,336	830,581,438	744,908,493
Program Total CPAS	265,103,071	3,151,873,525	225,644,015	430,481,783	697,448,458	916,267,005	1,145,625,354	1,140,588,632	1,129,511,405	1,119,515,782	1,101,800,919	1,055,100,307	965,998,625
CY2022 Program Incremental Expiring Savings§								32,394	863,883	1,577,726	1,446,035	1,833,714	3,428,736
Historic Program Incremental Expiring Savings							914,272	5,004,329	10,213,343	8,417,897	16,268,828	44,866,897	85,672,945
Program Total Incremental Expiring Savings#							914,272	5,036,722	11,077,227	9,995,624	17,714,863	46,700,611	89,101,682

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
CY2022 Program Total Contribution to CPAS	265,103,071	3,151,873,525	217,600,980	216,085,065	215,516,901	203,058,603	162,855,081	134,296,163	117,523,302	105,307,668	31,352,006	30,988,612	30,567,227
Historic Program Total Contribution to CPAS‡			702,107,135	623,136,596	512,649,633	404,685,099	285,858,433	228,033,593	141,245,451	64,169,391	62,748,034	47,736,764	46,689,597
Program Total CPAS	265,103,071	3,151,873,525	919,708,114	839,221,661	728,166,534	607,743,702	448,713,514	362,329,756	258,768,753	169,477,058	94,100,040	78,725,376	77,256,824
CY2022 Program Incremental Expiring Savings§			3,489,153	1,515,915	568,164	12,458,299	40,203,522	28,558,918	16,772,861	12,215,634	73,955,661	363,394	421,386
Historic Program Incremental Expiring Savings			42,801,359	78,970,539	110,486,963	107,964,534	118,826,666	57,824,840	86,788,143	77,076,060	1,421,357	15,011,270	1,047,167
Program Total Incremental Expiring Savings#			46,290,511	80,486,454	111,055,127	120,422,833	159,030,187	86,383,758	103,561,003	89,291,694	75,377,018	15,374,664	1,468,553

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	
CY2022 Program Total Contribution to CPAS	265,103,071	3,151,873,525	30,546,434	30,546,434	10,863,934	10,863,934	10,863,934	1,816,569	1,571,284	0	0	0	0	
Historic Program Total Contribution to CPAS‡			41,283,885	26,753,371	19,516,425	8,173,295	1,867,576	1,411,272	0	0	0	0	0	
Program Total CPAS	265,103,071	3,151,873,525	71,830,319	57,299,804	30,380,359	19,037,229	12,731,510	3,227,841	1,571,284	0	0	0	0	
CY2022 Program Incremental Expiring Savings§			20,793	0	19,682,499	0	0	9,047,365	245,285	1,571,284	0	0	0	
Historic Program Incremental Expiring Savings			5,405,712	14,530,514	7,236,946	11,343,130	6,305,719	456,303	1,411,272	0	0	0	0	
Program Total Incremental Expiring Savings#			5,426,505	14,530,514	26,919,445	11,343,130	6,305,719	9,503,669	1,656,557	1,571,284	0	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 – Gas**

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings											
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
CY2022 Program Total Gas Contribution to CPAS (Therms)	1,612,696	21,652,549					1,436,412	1,436,412	1,436,412	1,436,412	1,436,412	1,436,399	1,436,399	
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	47,268,125						42,101,226	42,101,226	42,101,226	42,101,226	42,101,226	42,100,853	42,100,853	
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			52,340,931	69,173,843	183,880,111	245,420,589	245,420,589	245,420,589	245,420,589	245,252,346	245,252,199	245,252,199	243,782,459	
Program Total Gas CPAS (kWh Equivalent)	47,268,125	0	52,340,931	69,173,843	183,880,111	245,420,589	287,521,815	287,521,815	287,521,815	287,353,572	287,353,425	287,353,052	285,883,312	
CY2022 Program Incremental Expiring Gas Savings (Therms)									0	0	0	0	13	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)									0	0	0	0	373	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#								0	0	0	168,243	147	0	1,469,741
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†								0	0	0	168,243	147	373	1,469,741

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings											
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
CY2022 Program Total Gas Contribution to CPAS (Therms)	1,612,696	21,652,549	1,436,399	1,436,399	1,436,399	1,405,590	1,405,570	1,405,570	1,405,570	1,405,570	1,405,570	52,126	52,126	52,126
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	47,268,125		42,100,853	42,100,853	42,100,853	41,197,829	41,197,245	41,197,245	41,197,245	41,197,245	41,197,245	1,527,803	1,527,803	1,527,803
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			242,975,625	242,354,842	241,585,320	241,585,306	190,784,868	174,758,790	61,221,581	1,186,531	1,186,531	1,186,531	1,186,531	1,186,531
Program Total Gas CPAS (kWh Equivalent)	47,268,125	0	285,076,478	284,455,696	283,686,173	282,783,134	231,982,113	215,956,035	102,418,826	42,383,776	2,714,334	2,714,334	2,714,334	2,714,334
CY2022 Program Incremental Expiring Gas Savings (Therms)			0	0	0	30,809	20	0	0	0	0	1,353,444	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			0	0	0	903,025	584	0	0	0	39,669,442	0	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			806,834	620,783	769,523	14	50,800,438	16,026,078	113,537,210	60,035,050	0	0	0	0
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			806,834	620,783	769,523	903,039	50,801,021	16,026,078	113,537,210	60,035,050	39,669,442	0	0	0

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings											
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
CY2022 Program Total Gas Contribution to CPAS (Therms)	1,612,696	21,652,549	52,126	52,126	0	0	0	0	0	0	0	0	0	0
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	47,268,125		1,527,803	1,527,803	0	0	0	0	0	0	0	0	0	0
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			1,186,531	23,184	23,184	23,184	0	0	0	0	0	0	0	0
Program Total Gas CPAS (kWh Equivalent)	47,268,125	0	2,714,334	1,550,987	23,184	23,184	0	0	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (Therms)			0	0	52,126	0	0	0	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			0	0	1,527,803	0	0	0	0	0	0	0	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			0	1,163,347	0	0	23,184	0	0	0	0	0	0	0
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			0	1,163,347	1,527,803	0	23,184	0	0	0	0	0	0	0

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

‡ kWh equivalent savings are calculated by multiplying therm 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	
CY2022 Program Total Contribution to CPAS	312,371,196	3,786,509,746					272,373,847	272,341,454	271,477,570	269,899,844	268,453,809	266,619,722	263,190,986	
Historic Program Total Contribution to CPAS‡			277,984,946	499,655,626	881,328,569	1,161,687,594	1,160,773,322	1,155,768,994	1,145,555,650	1,136,969,510	1,120,700,535	1,075,833,637	988,690,952	
Program Total CPAS	312,371,196	3,786,509,746	277,984,946	499,655,626	881,328,569	1,161,687,594	1,433,147,170	1,428,110,447	1,417,033,221	1,406,869,354	1,389,154,344	1,342,453,360	1,251,881,937	
CY2022 Program Incremental Expiring Savings§									32,394	863,883	1,577,726	1,446,035	1,834,087	3,428,736
Historic Program Incremental Expiring Savings								914,272	5,004,329	10,213,343	8,586,140	16,268,975	44,866,897	87,142,686
Program Total Incremental Expiring Savings#								914,272	5,036,722	11,077,227	10,163,867	17,715,010	46,700,984	90,571,422

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
CY2022 Program Total Contribution to CPAS	312,371,196	3,786,509,746	259,701,833	258,185,918	257,617,755	244,256,431	204,052,326	175,493,408	158,720,547	146,504,913	32,879,809	32,516,415	32,095,030
Historic Program Total Contribution to CPAS‡			945,082,759	865,491,438	754,234,953	646,270,405	476,643,302	402,792,384	202,467,032	65,355,922	63,934,565	48,923,295	47,876,128
Program Total CPAS	312,371,196	3,786,509,746	1,204,784,593	1,123,677,356	1,011,852,707	890,526,836	680,695,628	578,285,791	361,187,579	211,860,834	96,814,374	81,439,710	79,971,158
CY2022 Program Incremental Expiring Savings§			3,489,153	1,515,915	568,164	13,361,323	40,204,105	28,558,918	16,772,861	12,215,634	113,625,103	363,394	421,386
Historic Program Incremental Expiring Savings			43,608,192	79,591,321	111,256,485	107,964,548	169,627,103	73,850,918	200,325,352	137,111,110	1,421,357	15,011,270	1,047,167
Program Total Incremental Expiring Savings#			47,097,345	81,107,236	111,824,649	121,325,871	209,831,208	102,409,836	217,098,213	149,326,744	115,046,460	15,374,664	1,468,553

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	
CY2022 Program Total Contribution to CPAS	312,371,196	3,786,509,746	32,074,237	32,074,237	10,863,934	10,863,934	10,863,934	1,816,569	1,571,284	0	0	0	0	
Historic Program Total Contribution to CPAS‡			42,470,416	26,776,555	19,539,609	8,196,479	1,867,576	1,411,272	0	0	0	0	0	
Program Total CPAS	312,371,196	3,786,509,746	74,544,653	58,850,792	30,403,543	19,060,413	12,731,510	3,227,841	1,571,284	0	0	0	0	
CY2022 Program Incremental Expiring Savings§			20,793	0	21,210,303	0	0	9,047,365	245,285	1,571,284	0	0	0	
Historic Program Incremental Expiring Savings			5,405,712	15,693,861	7,236,946	11,343,130	6,328,904	456,303	1,411,272	0	0	0	0	
Program Total Incremental Expiring Savings#			5,426,505	15,693,861	28,447,248	11,343,130	6,328,904	9,503,669	1,656,557	1,571,284	0	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