



ComEd Targeted Systems Program Impact Evaluation Report

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

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Introduction

This report presents the results of the impact evaluation of the Targeted Systems program for the program year from January 1 to December 31, 2022 (CY2022).

The Targeted Systems program provides a fully funded engineering study to help optimize operations of existing building and industrial systems and identifies low-cost and no-cost measures for systems and processes. The program is also available to smaller customers, through measures in which smart meter interval usage data is used to remotely identify operational savings opportunities. The program also offers tuition-reimbursement for customers who complete the training and certification for commercial building operators. Eligible measures include low-cost energy conservation measures that have an average simple payback of 18 months, capital investments, and operational adjustments, such as optimizing operating parameters, properly matching equipment to load, and installing controls that improve system efficiency. Applicable systems include compressed air, process cooling, industrial refrigeration, building HVAC systems, water and wastewater treatment, and process efficiency for heating and cooling in production. This program targets public and private C&I customers in ComEd’s service territory. Typical participants include commercial office buildings, hospitals/health care facilities, higher education buildings, and industrial customers.

The program is offered jointly to customers served by ComEd, Nicor Gas, Peoples Gas, and North Shore Gas. This report presents the results just for ComEd. The results for the gas utilities will be in a separate report.

Program Savings Detail

Table 1 summarizes the incremental energy and demand savings the Targeted Systems 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.¹

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		108,656,206	0.98	106,079,922	0.85	N/A	N/A	90,144,532
Electric Energy Savings - Converted from Gas§ kWh		11,444,759	0.56	6,437,307	0.94	N/A	N/A	6,079,560
Electric Energy Savings - Indirect from Fuel Switching (through Electrification) kWh		0	N/A	0	N/A	N/A	N/A	0
Total Electric Energy Savings# kWh		120,100,965	0.94	112,517,229	0.86	N/A	N/A	96,224,092
Secondary Water Savings kWh		0	N/A	0	N/A	N/A	N/A	0
Summer Peak** Demand Savings kW		10,073	1.19	11,959	0.82	N/A	N/A	9,863

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

* 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).

¹ 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.”

‡ 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 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*

Cumulative Persisting Annual Savings

Tables 2 to 4 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	106,079,922	616,666,397					90,144,532	90,144,532	90,144,532	57,922,234	56,970,346	56,646,406	56,646,406	
Historic Program Total Contribution to CPAS‡		2,208,839,698	60,659,142	106,764,200	193,396,065	265,339,807	265,339,807	235,752,760	219,153,805	201,639,394	182,804,474	151,761,405	94,451,431	
Program Total CPAS	106,079,922	2,825,506,095	60,659,142	106,764,200	193,396,065	265,339,807	355,484,339	325,897,292	309,298,338	259,561,628	239,774,820	208,407,811	151,097,837	
CY2022 Program Incremental Expiring Savings§								0	0	32,222,298	951,888	323,940	0	
Historic Program Incremental Expiring Savings								0	29,587,047	16,598,955	17,514,412	18,834,919	31,043,069	57,309,974
Program Total Incremental Expiring Savings#								0	29,587,047	16,598,955	49,736,710	19,786,807	31,367,009	57,309,974

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	106,079,922	616,666,397	38,475,824	22,890,910	11,266,253	11,226,250	11,226,250	11,226,250	2,803,871	2,803,871	1,376,847	971,224	808,054
Historic Program Total Contribution to CPAS‡		2,208,839,698	58,443,221	46,783,469	39,841,274	39,841,274	19,661,779	8,189,519	3,342,245	2,925,378	2,925,378	2,820,853	2,716,328
Program Total CPAS	106,079,922	2,825,506,095	96,919,045	69,674,379	51,107,528	51,067,525	30,888,030	19,415,769	6,146,116	5,729,249	4,302,225	3,792,077	3,524,382
CY2022 Program Incremental Expiring Savings§			18,170,582	15,584,914	11,624,656	40,003	0	0	8,422,380	0	1,427,024	405,623	163,170
Historic Program Incremental Expiring Savings			36,008,210	11,659,752	6,942,195	0	20,179,495	11,472,260	4,847,274	416,867	0	104,525	104,525
Program Total Incremental Expiring Savings#			54,178,792	27,244,666	18,566,851	40,003	20,179,495	11,472,260	13,269,654	416,867	1,427,024	510,148	267,695

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	106,079,922	616,666,397	644,883	644,883	560,679	560,679	560,679	0	0	0	0	0	0
Historic Program Total Contribution to CPAS‡		2,208,839,698	2,716,328	740,561	740,561	89,233	0	0	0	0	0	0	0
Program Total CPAS	106,079,922	2,825,506,095	3,361,212	1,385,445	1,301,241	649,913	560,679	0	0	0	0	0	0
CY2022 Program Incremental Expiring Savings§			163,170	0	84,204	0	0	560,679	0	0	0	0	0
Historic Program Incremental Expiring Savings			0	1,975,767	0	651,328	89,233	0	0	0	0	0	0
Program Total Incremental Expiring Savings#			163,170	1,975,767	84,204	651,328	89,233	560,679	0	0	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)	219,628	1,790,600					207,423	207,423	207,423	207,423	200,618	200,618	200,618	
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	6,437,307	52,482,499					6,079,560	6,079,560	6,079,560	6,079,560	5,880,122	5,880,122	5,880,122	
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§		75,045,343	2,907,030	3,986,674	7,278,229	9,167,511	9,167,511	9,167,511	9,167,511	7,713,996	6,260,481	5,396,766	3,788,915	
Program Total Gas CPAS (kWh Equivalent)	6,437,307	127,527,842	2,907,030	3,986,674	7,278,229	9,167,511	15,247,071	15,247,071	15,247,071	13,793,556	12,140,603	11,276,888	9,669,037	
CY2022 Program Incremental Expiring Gas Savings (Therms)									0	0	0	6,804	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)									0	0	0	199,438	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#								0	0	0	1,453,515	1,453,515	863,715	1,607,851
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†								0	0	0	1,453,515	1,652,952	863,715	1,607,851

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)	219,628	1,790,600	199,128	122,341	9,397	9,397	9,397	9,397	0	0	0	0	0	0
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	6,437,307	52,482,499	5,836,430	3,585,808	275,414	275,414	275,414	275,414	0	0	0	0	0	0
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§		75,045,343	1,043,209	0	0	0	0	0	0	0	0	0	0	0
Program Total Gas CPAS (kWh Equivalent)	6,437,307	127,527,842	6,879,639	3,585,808	275,414	275,414	275,414	275,414	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (Therms)			1,491	76,787	112,944	0	0	0	9,397	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			43,693	2,250,622	3,310,394	0	0	0	275,414	0	0	0	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			2,745,706	1,043,209	0	0	0	0	0	0	0	0	0	0
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			2,789,398	3,293,831	3,310,394	0	0	0	275,414	0	0	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)	219,628	1,790,600	0	0	0	0	0	0	0	0	0	0	0	0
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	6,437,307	52,482,499	0	0	0	0	0	0	0	0	0	0	0	0
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§		75,045,343	0	0	0	0	0	0	0	0	0	0	0	0
Program Total Gas CPAS (kWh Equivalent)	6,437,307	127,527,842	0	0	0	0	0	0	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (Therms)			0	0	0	0	0	0	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			0	0	0	0	0	0	0	0	0	0	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			0	0	0	0	0	0	0	0	0	0	0	0
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			0	0	0	0	0	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	112,517,229	669,148,896					96,224,092	96,224,092	96,224,092	64,001,794	62,850,468	62,526,528	62,526,528
Historic Program Total Contribution to CPAS‡		2,081,833,431	63,566,172	110,750,874	200,674,295	250,655,545	250,655,545	221,068,498	204,469,543	185,501,616	165,213,182	133,306,398	75,785,682
Program Total CPAS	112,517,229	2,750,982,327	63,566,172	110,750,874	200,674,295	250,655,545	346,879,637	317,292,590	300,693,635	249,503,410	228,063,650	195,832,926	138,312,210
CY2022 Program Incremental Expiring Savings§								0	0	32,222,298	1,151,326	323,940	0
Historic Program Incremental Expiring Savings							0	29,587,047	16,598,955	18,967,927	20,288,434	31,906,784	57,520,716
Program Total Incremental Expiring Savings#							0	29,587,047	16,598,955	51,190,225	21,439,760	32,230,724	57,520,716

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	112,517,229	669,148,896	44,312,254	26,476,718	11,541,667	11,501,664	11,501,664	11,501,664	2,803,871	2,803,871	1,376,847	971,224	808,054
Historic Program Total Contribution to CPAS‡		2,081,833,431	46,851,897	46,783,469	39,841,274	39,841,274	19,661,779	8,189,519	3,342,245	2,925,378	2,925,378	2,820,853	2,716,328
Program Total CPAS	112,517,229	2,750,982,327	91,164,151	73,260,187	51,382,942	51,342,938	31,163,443	19,691,183	6,146,116	5,729,249	4,302,225	3,792,077	3,524,382
CY2022 Program Incremental Expiring Savings§			18,214,275	17,835,536	14,935,050	40,003	0	0	8,697,794	0	1,427,024	405,623	163,170
Historic Program Incremental Expiring Savings			28,933,785	68,428	6,942,195	0	20,179,495	11,472,260	4,847,274	416,867	0	104,525	104,525
Program Total Incremental Expiring Savings#			47,148,060	17,903,964	21,877,245	40,003	20,179,495	11,472,260	13,545,068	416,867	1,427,024	510,148	267,695

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	112,517,229	669,148,896	644,883	644,883	560,679	560,679	560,679	0	0	0	0	0	0
Historic Program Total Contribution to CPAS‡		2,081,833,431	2,716,328	740,561	740,561	89,233	0	0	0	0	0	0	0
Program Total CPAS	112,517,229	2,750,982,327	3,361,212	1,385,445	1,301,241	649,913	560,679	0	0	0	0	0	0
CY2022 Program Incremental Expiring Savings§			163,170	0	84,204	0	0	560,679	0	0	0	0	0
Historic Program Incremental Expiring Savings			0	1,975,767	0	651,328	89,233	0	0	0	0	0	0
Program Total Incremental Expiring Savings#			163,170	1,975,767	84,204	651,328	89,233	560,679	0	0	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