

ComEd Product Distribution Program Impact Evaluation Report

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

Prepared for:

ComEd

FINAL

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Introduction

This report presents the results of the impact evaluation of the Product Distribution program from the program year from January 1 to December 31, 2023 (CY2023). The Product Distribution Program has three components: Elementary Education Kits, Food Bank, and Income Eligible (IE) Kits. The program was designed to provide free energy-saving products for distribution within local communities. ComEd partnered with Community Action Agencies, Food Pantries, Elementary Schools, and gas utilities to supply eligible customers with free kits.

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 separate reports.

Program Savings Detail

Table 1 summarizes the incremental energy and demand savings the Product Distribution 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.¹ Table 2 summarizes the savings achieved from income eligible participants and Table 3 summarizes savings from non-income eligible participants. Together they make up the total shown in Table 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)	CY2021 Net Carryover Savings	CY2022 Net Carryover Savings	Verified Net Savings†
Electric Energy Savings - Direct‡	kWh	273,570,963	1.00	273,547,930	1.00	10,267,322	14,905,205	298,581,053
Electric Energy Savings - Converted from Other Fuel§	kWh	10,453,105	1.00	10,455,875	1.00			10,455,875
Electric Energy Savings - Electrification	kWh							
Total Electric Energy Savings#	kWh	284,024,068	1.00	284,003,804	1.00	10,267,322	14,905,205	309,036,928
Total Electric Energy Savings Including Carryover##	kWh	284,024,068	1.09	309,245,597	1.00	10,267,322	14,905,205	309,036,928
Summer Peak**† Demand Savings	kW	35,258	0.94	33,285	1.00	1,207	1,748	36,233
Summer Peak**† Demand Savings Including Carryover	kW	35,258	1.03	36,248	1.00	1,207	1,748	36,233

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 include net carryover savings from CY2021 and CY2022.

‡ 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 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.

¹ 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.”

|| 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

Table 2. Incremental Electric Savings – Income Eligible

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	268,735,575	1.00	268,726,018	1.00	10,010,213	14,479,234	293,215,466
Electric Energy Savings - Converted from Other Fuel§	kWh	10,453,105	1.00	10,455,875	1.00			10,455,875
Electric Energy Savings - Electrification	kWh							
Total Electric Energy Savings#	kWh	279,188,680	1.00	279,181,893	1.00	10,010,213	14,479,234	303,671,341
Total Electric Energy Savings Including Carryover#	kWh	279,188,680	1.09	303,671,341	1.00	10,010,213	14,479,234	303,671,341
Summer Peak** Demand Savings	kW	34,595	0.94	32,625	1.00	1,181	1,699	35,505
Summer Peak** Demand Savings Including Carryover	kW	34,595	1.03	35,505	1.00	1,181	1,699	35,505

Footnotes are defined similarly as found in Table 1.

Source: Evaluation team analysis

Table 3. Total Annual Incremental Electric Savings – Non-Income Eligible

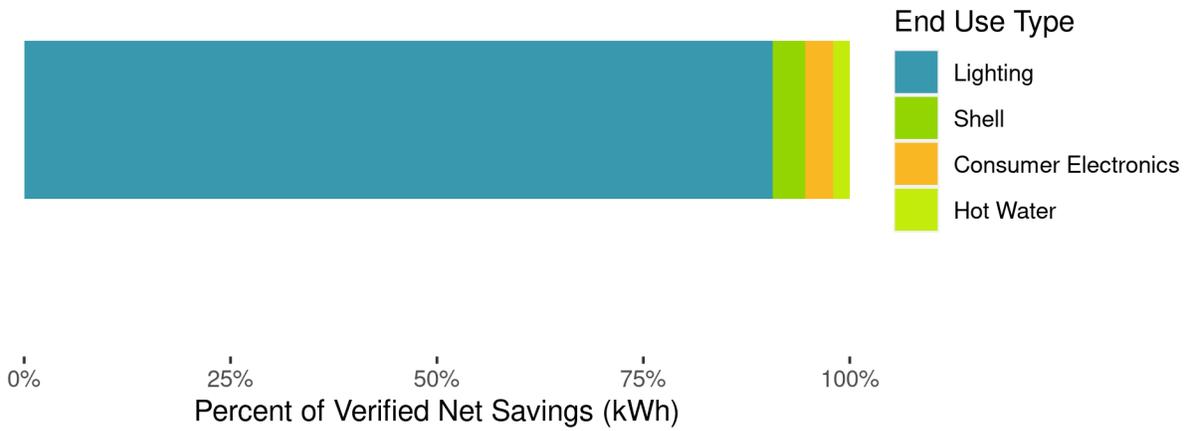
Savings Category	Units	Ex Ante Gross Savings*	Program Gross Realization Rate	Verified Gross Savings*	Program Net-to-Gross Ratio (NTG)	CY2021 Net Carryover Savings	CY2022 Net Carryover Savings	Verified Net Savings†
Electric Energy Savings - Direct‡	kWh	4,835,388	1.00	4,821,911	0.97	257,109	425,971	5,365,587
Electric Energy Savings - Converted from Other Fuel§	kWh	0		0				0
Electric Energy Savings - Electrification	kWh							
Total Electric Energy Savings#	kWh	4,835,388	1.00	4,821,911	0.97	257,109	425,971	5,365,587
Total Electric Energy Savings Including Carryover#	kWh	4,835,388	1.15	5,574,256	0.96	257,109	425,971	5,365,587
Summer Peak** Demand Savings	kW	663	1.00	659	0.99	26	49	727
Summer Peak** Demand Savings Including Carryover	kW	663	1.12	742	0.98	26	49	727

Footnotes are defined similarly as found in Table 1.

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 4 to Table 6 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 4. The gas and other fuel contribution to CPAS (converted to equivalent electricity) are shown in Table 5. The combined savings are shown in Table 6.

Table 4. 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	298,789,722	2,415,609,366						298,581,053	298,581,053	296,210,481	296,210,481	272,017,595	272,017,595
Historic Program Total Contribution to CPAS‡			56,396,205	161,973,998	309,944,405	329,174,113	507,880,161	507,574,297	500,449,721	495,909,655	491,614,259	421,153,067	376,188,164
Program Total CPAS	298,789,722	2,415,609,366	56,396,205	161,973,998	309,944,405	329,174,113	507,880,161	806,155,350	799,030,774	792,120,136	787,824,740	693,170,661	648,205,759
CY2023 Program Incremental Expiring Savings§									0	2,370,572	0	24,192,886	0
Historic Program Incremental Expiring Savings								305,864	7,124,576	4,540,066	4,295,396	70,461,193	44,964,902
Program Total Incremental Expiring Savings#								305,864	7,124,576	6,910,638	4,295,396	94,654,078	44,964,902

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	298,789,722	2,415,609,366	272,017,595	261,784,461	15,572,575	15,572,575	11,704,390	11,704,390	11,704,390	11,704,390	11,704,390	11,704,390	11,704,390
Historic Program Total Contribution to CPAS‡			306,775,231	220,625,007	138,672,228	8,248,357	8,248,357	8,248,357	8,248,357	8,234,286	7,654,787	7,654,787	7,654,787
Program Total CPAS	298,789,722	2,415,609,366	578,792,826	482,409,468	154,244,803	23,820,932	19,952,747	19,952,747	19,952,747	19,938,676	19,359,177	19,359,177	19,359,177
CY2023 Program Incremental Expiring Savings§			0	10,233,133	246,211,886	0	3,868,185	0	0	0	0	0	0
Historic Program Incremental Expiring Savings			69,412,933	86,150,225	81,952,779	130,423,871	0	0	0	14,071	579,499	0	0
Program Total Incremental Expiring Savings#			69,412,933	96,383,358	328,164,665	130,423,871	3,868,185	0	0	14,071	579,499	0	0

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	298,789,722	2,415,609,366	11,704,390	11,704,390	11,704,390	0	0	0	0	0	0	0	0
Historic Program Total Contribution to CPAS‡			7,634,693	6,073,360	0	0	0	0	0	0	0	0	0
Program Total CPAS	298,789,722	2,415,609,366	19,339,083	17,777,750	11,704,390	0	0	0	0	0	0	0	0
CY2023 Program Incremental Expiring Savings§			0	0	0	11,704,390	0	0	0	0	0	0	0
Historic Program Incremental Expiring Savings			20,094	1,561,332	6,073,360	0	0	0	0	0	0	0	0
Program Total Incremental Expiring Savings#			20,094	1,561,332	6,073,360	11,704,390	0	0	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 5. 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)	356,734	5,627,590							356,734	356,734	338,329	338,329	338,329	338,329
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	10,455,875								10,455,875	10,455,875	9,916,431	9,916,431	9,916,431	9,916,431
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			5,157,303	26,567,068	47,425,490	66,987,986	97,207,619	97,047,425	94,574,102	94,574,102	94,574,102	93,073,075	89,735,263	
Program Total Other Fuel CPAS (kWh Equivalent)	10,455,875	0	5,157,303	26,567,068	47,425,490	66,987,986	97,207,619	107,503,300	105,029,977	104,490,533	104,490,533	102,989,506	99,651,694	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)										0	18,405	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)										0	539,444	0	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#									160,193	2,473,323	0	0	1,501,027	3,337,812
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†									160,193	2,473,323	539,444	0	1,501,027	3,337,812

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)	356,734	5,627,590	338,329	338,329	338,329	338,329	220,749	220,749	220,749	220,749	220,749	220,749	220,749
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	10,455,875		9,916,431	9,916,431	9,916,431	9,916,431	6,470,146	6,470,146	6,470,146	6,470,146	6,470,146	6,470,146	6,470,146
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			68,789,816	48,017,095	47,196,611	38,862,027	38,862,027	38,862,027	38,862,027	38,862,027	38,683,025	38,683,025	38,683,025
Program Total Other Fuel CPAS (kWh Equivalent)	10,455,875	0	78,706,247	57,933,525	57,113,042	48,778,458	45,332,174	45,332,174	45,332,174	45,332,174	45,153,171	45,153,171	45,153,171
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	0	117,581	0	0	0	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	0	3,446,284	0	0	0	0	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			20,945,447	20,772,722	820,483	8,334,584	0	0	0	0	179,003	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			20,945,447	20,772,722	820,483	8,334,584	3,446,284	0	0	0	179,003	0	0

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	CPAS Verified Net Therms Savings											
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
CY2023 Program Total Other Fuel Contribution to CPAS (Therms)	356,734	5,627,590	220,749	220,749	220,749	0	0	0	0	0	0	0	0	
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	10,455,875		6,470,146	6,470,146	6,470,146	0	0	0	0	0	0	0	0	
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			38,683,025	19,539,960	0	0	0	0	0	0	0	0	0	
Program Total Other Fuel CPAS (kWh Equivalent)	10,455,875	0	45,153,171	26,010,107	6,470,146	0	0	0	0	0	0	0	0	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	220,749	0	0	0	0	0	0	0	
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	6,470,146	0	0	0	0	0	0	0	
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			0	19,143,064	19,539,960	0	0	0	0	0	0	0	0	
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			0	19,143,064	19,539,960	6,470,146	0	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 6. 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	309,245,597	2,580,554,025							309,036,928	309,036,928	306,126,912	306,126,912	281,934,026	281,934,026
Historic Program Total Contribution to CPAS [‡]			61,553,508	188,541,066	357,369,895	396,162,099	605,087,780	604,621,723	595,023,823	590,483,757	586,188,361	514,226,142	465,923,427	
Program Total CPAS	309,245,597	2,580,554,025	61,553,508	188,541,066	357,369,895	396,162,099	605,087,780	913,658,650	904,060,751	896,610,669	892,315,273	796,160,168	747,857,453	
CY2023 Program Incremental Expiring Savings [§]									0	2,910,016	0	24,192,886	0	
Historic Program Incremental Expiring Savings								466,057	9,597,899	4,540,066	4,295,396	71,962,219	48,302,715	
Program Total Incremental Expiring Savings [#]								466,057	9,597,899	7,450,082	4,295,396	96,155,105	48,302,715	

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	309,245,597	2,580,554,025	281,934,026	271,700,892	25,489,006	25,489,006	18,174,537	18,174,537	18,174,537	18,174,537	18,174,537	18,174,537	18,174,537	18,174,537
Historic Program Total Contribution to CPAS [‡]			375,565,048	268,642,101	185,868,839	47,110,384	47,110,384	47,110,384	47,110,384	47,096,313	46,337,811	46,337,811	46,337,811	46,337,811
Program Total CPAS	309,245,597	2,580,554,025	657,499,074	540,342,993	211,357,846	72,599,390	65,284,920	65,284,920	65,284,920	65,270,850	64,512,348	64,512,348	64,512,348	64,512,348
CY2023 Program Incremental Expiring Savings [§]			0	10,233,133	246,211,886	0	7,314,470	0	0	0	0	0	0	0
Historic Program Incremental Expiring Savings			90,358,379	106,922,947	82,773,262	138,758,455	0	0	0	14,071	758,502	0	0	0
Program Total Incremental Expiring Savings [#]			90,358,379	117,156,080	328,985,148	138,758,455	7,314,470	0	0	14,071	758,502	0	0	0

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	309,245,597	2,580,554,025	18,174,537	18,174,537	18,174,537	0	0	0	0	0	0	0	0	0
Historic Program Total Contribution to CPAS [‡]			46,317,717	25,613,320	0	0	0	0	0	0	0	0	0	0
Program Total CPAS	309,245,597	2,580,554,025	64,492,254	43,787,857	18,174,537	0	0	0	0	0	0	0	0	0
CY2023 Program Incremental Expiring Savings [§]			0	0	0	18,174,537	0	0	0	0	0	0	0	0
Historic Program Incremental Expiring Savings			20,094	20,704,397	25,613,320	0	0	0	0	0	0	0	0	0
Program Total Incremental Expiring Savings [#]			20,094	20,704,397	25,613,320	18,174,537	0	0	0	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 Y_{n-1} - CPAS Y_n.

^{||} Historic incremental expiring savings are equal to Historic CPAS Y_{n-1} – Historic CPAS Y_n.

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

Source: Evaluation team analysis