



# ComEd Multifamily Upgrades Program Impact 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

The Multifamily Upgrades report includes three sections. The Multifamily Upgrades program section provides the combined total of all activities. The Public Housing Upgrades (PH) section details results for this program component. The final section presents Multifamily Upgrades program savings excluding the Public Housing Upgrades component.

## Multifamily Upgrades Program

### Introduction

This section presents the results of the impact evaluation of the Multifamily Upgrades program from the program year from January 1 to December 31, 2023 (CY2023). The program was designed to provide rebates and free energy-savings products for energy efficiency upgrades at both multifamily housing and public housing units.

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

### Program Savings Detail

Table 1. summarizes the incremental energy and demand savings the Multifamily Upgrades program achieved in CY2023, including the Public Housing Upgrades component. The gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim.<sup>1</sup> The electrification savings are those resulting from electrification measures.<sup>2</sup> A subset of installed heat pumps had a Beneficial Electrification rebate applied. The associated savings were adjusted accordingly based on the incentive split between Beneficial Electrification and Energy Efficiency.<sup>3</sup> 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.. Guidehouse applied the CY2022 realization rates to the MR, IE, WHE and IHWAP components of the Multifamily Upgrades program to determine the gross verified savings for CY2023. For the PH component, the per-unit savings fell

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<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."

<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."

<sup>3</sup> ComEd Beneficial Electrification Plan 1 (2023-2025) Annual Report PY2023: <https://www.icc.illinois.gov/docket/P2022-0432/documents/348887/files/609880.pdf>. In accordance with the final order section (i) sub-section (iii) Residential BE Technology Adoption Sub-program, at page 38-39, pursuant to 220 ILCS 5/8-103B, Docket No. 22-0432/22-0442 (Cons.).

outside of acceptable bounds so Illinois Technical Reference Manual version 11.0 (IL-TRM v11.0) was used to calculate verified savings.

**Table 1. Multifamily Upgrades 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	30,744,829	1.09	33,376,661	0.99			33,044,033
Electric Energy Savings - Converted from Other Fuels§	kWh	21,727,226	0.94	20,438,404				20,438,404
Electric Energy Savings - Electrification	kWh	1,829,171	1.05	1,920,629				1,920,629
Total Electric Energy Savings#	kWh	54,301,226	1.03	55,735,695	0.99			55,403,066
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak** Demand Savings	kW	2,351	1.02	2,408	0.98			2,367
Summer Peak** Demand Savings Including Carryover	kW							

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 exclude 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 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

**Table 2. Multifamily Upgrades Total Annual 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	25,051,154	1.10	27,681,371	1.00			27,681,371
Electric Energy Savings - Converted from Other Fuel§	kWh	21,727,226	0.94	20,438,404	1.00			20,438,404
Electric Energy Savings - Electrification	kWh	1,829,171	1.05	1,920,629	1.00			1,920,629
Total Electric Energy Savings#	kWh	48,607,551	1.03	50,040,405	1.00			50,040,405
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak*†† Demand Savings	kW	1,712	1.03	1,771	1.00			1,762
Summer Peak*†† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.  
 Source: Evaluation team analysis

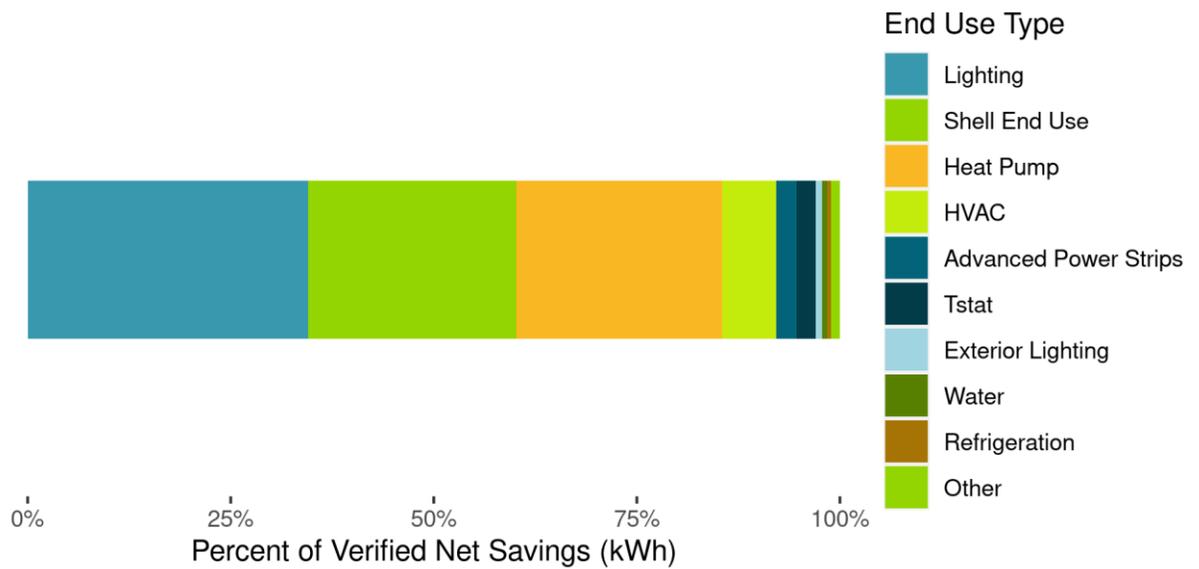
**Table 3. Multifamily Upgrades Total Annual Incremental Electric Savings - Non-Income Eligible**

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	5,693,675	1.00	5,695,290	0.94			5,362,662
Electric Energy Savings - Converted from Other Fuel§	kWh	0		0				0
Electric Energy Savings - Electrification	kWh	0		0				
Total Electric Energy Savings#	kWh	5,693,675	1.00	5,695,290	0.94			5,362,662
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak*†† Demand Savings	kW	639	1.00	638	0.95			605
Summer Peak*†† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.  
 Source: Evaluation team analysis

Figure 1 presents the electric energy savings by measure end use. It includes measure efficiency savings and secondary water kWh. It does not include gas savings converted to kWh.

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



Source: Evaluation team analysis

## Cumulative Persistent Annual Savings

Table 4 to Table 6 show the cumulative persisting annual savings (CPAS) for the measures installed in CY2023.

Table 4 shows the electric CPAS across all measures installed in CY2023. Table 5 shows the gas contribution to CPAS (converted to equivalent electricity). Table 6 shows the combined savings.

**Table 4. Multifamily Upgrades 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	35,297,291	457,500,060						34,964,662	34,911,779	34,249,465	34,222,803	34,207,717	31,241,921
Historic Program Total Contribution to CPAS‡			18,692,635	31,612,149	44,056,835	53,407,791	78,166,192	75,996,598	69,939,176	62,710,738	52,192,313	44,179,480	33,806,585
Program Total CPAS	35,297,291	457,500,060	18,692,635	31,612,149	44,056,835	53,407,791	78,166,192	110,961,260	104,850,955	96,960,203	86,415,116	78,387,197	65,048,506
CY2023 Program Incremental Expiring Savings§									52,883	662,314	26,662	15,086	2,965,795
Historic Program Incremental Expiring Savings								2,169,594	6,057,422	7,228,438	10,518,425	8,012,833	10,372,896
Program Total Incremental Expiring Savings#								2,169,594	6,110,305	7,890,753	10,545,087	8,027,919	13,338,691

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	35,297,291	457,500,060	25,906,145	25,017,586	23,905,738	23,775,612	23,154,898	22,025,564	20,945,514	20,942,204	20,936,394	11,489,723	8,882,855
Historic Program Total Contribution to CPAS‡			29,677,639	27,872,967	24,768,362	15,008,697	12,683,465	11,327,634	10,454,160	9,949,374	6,863,912	6,564,296	6,137,306
Program Total CPAS	35,297,291	457,500,060	55,583,784	52,890,553	48,674,100	38,784,309	35,838,363	33,353,197	31,399,674	30,891,578	27,800,307	18,054,019	15,020,161
CY2023 Program Incremental Expiring Savings§			5,335,777	888,559	1,111,847	130,127	620,714	1,129,335	1,080,049	3,310	5,810	9,446,671	2,606,869
Historic Program Incremental Expiring Savings			4,128,945	1,804,672	3,104,606	9,759,665	2,325,232	1,355,832	873,474	504,786	3,085,462	299,616	426,990
Program Total Incremental Expiring Savings#			9,464,722	2,693,231	4,216,453	9,889,791	2,945,945	2,485,166	1,953,523	508,096	3,091,272	9,746,287	3,033,859

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	35,297,291	457,500,060	8,881,754	8,881,754	8,881,754	24,739	24,739	24,739	0	0	0	0	0
Historic Program Total Contribution to CPAS‡			5,173,394	3,727,595	272,662	29,894	29,894	29,894	0	0	0	0	0
Program Total CPAS	35,297,291	457,500,060	14,055,148	12,609,349	9,154,417	54,632	54,632	54,632	0	0	0	0	0
CY2023 Program Incremental Expiring Savings§			1,100	0	0	8,857,016	0	0	24,739	0	0	0	0
Historic Program Incremental Expiring Savings			963,912	1,445,799	3,454,933	242,769	0	0	29,894	0	0	0	0
Program Total Incremental Expiring Savings#			965,013	1,445,799	3,454,933	9,099,784	0	0	54,632	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. Multifamily Upgrades 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)	697,318	11,229,187							697,318	697,318	694,645	669,816	669,816	668,754
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	20,438,404								20,438,404	20,438,404	20,360,049	19,632,294	19,632,294	19,601,181
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			12,959,424	32,490,632	42,016,456	44,838,469	79,779,714	79,260,244	75,660,007	67,803,738	67,581,533	64,964,815	54,918,434	
Program Total Other Fuel CPAS (kWh Equivalent)	20,438,404	0	12,959,424	32,490,632	42,016,456	44,838,469	79,779,714	99,698,648	96,098,412	88,163,788	87,213,827	84,597,109	74,519,615	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)									0	2,673	24,830	0	1,062	
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)									0	78,355	727,755	0	31,113	
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#								519,471	3,600,237	7,856,269	222,206	2,616,718	10,046,381	
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†								519,471	3,600,237	7,934,624	949,961	2,616,718	10,077,494	

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)	CY2023 Program	697,318	11,229,187	612,594	612,594	612,594	612,594	612,594	602,338	549,368	549,368	548,999	548,999	356,444
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	CY2023 Program	20,438,404		17,955,129	17,955,129	17,955,129	17,955,129	17,955,129	17,654,515	16,101,979	16,101,979	16,091,153	16,091,153	10,447,374

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings†	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§	Historic Program			54,424,542	53,745,227	53,720,962	51,721,888	46,356,393	42,032,059	38,978,763	38,867,425	30,072,555	26,654,949
Program Total Other Fuel Contribution to CPAS (kWh Equivalent)	Program Total	20,438,404	0	72,379,670	71,700,356	71,676,091	69,677,016	64,010,908	58,134,038	55,080,743	54,958,578	46,163,707	37,102,324
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)	CY2023 Program			56,160	0	0	0	10,256	52,969	0	369	0	192,555
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)	CY2023 Program			1,646,053	0	0	0	300,613	1,552,536	0	10,826	0	5,643,778
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#	Historic Program			493,892	679,315	24,265	1,999,074	5,365,495	4,324,334	3,053,296	111,338	8,794,871	3,417,605
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†	Program Total			2,139,945	679,315	24,265	1,999,074	5,666,108	5,876,870	3,053,296	122,164	8,794,871	9,061,384

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)	697,318	11,229,187	341,990	341,990	341,990	31,534	31,534	31,534	31,534	31,534	0	0	0
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	20,438,404		10,023,734	10,023,734	10,023,734	924,249	924,249	924,249	924,249	924,249	0	0	0
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			17,605,353	17,146,170	8,348,567	6,306,028	3,332,294	465,312	0	0	0	0	0
Program Total Other Fuel CPAS (kWh Equivalent)	20,438,404	0	27,629,087	27,169,904	18,372,301	7,230,278	4,256,544	1,389,561	924,249	924,249	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	310,457	0	0	0	0	31,534	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	9,099,485	0	0	0	0	924,249	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			2,650,891	459,183	8,797,603	2,042,538	2,973,734	2,866,983	465,312	0	0	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			2,650,891	459,183	8,797,603	11,142,023	2,973,734	2,866,983	465,312	0	924,249	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. Multifamily Upgrades 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	55,735,695	786,843,419							55,403,066	55,350,183	54,609,514	53,855,097	53,840,011	50,843,102
Historic Program Total Contribution to CPAS‡			31,652,059	64,102,781	86,073,291	98,246,260	157,945,906	155,256,842	145,599,183	130,514,476	119,773,846	109,144,295	88,725,019	
Program Total CPAS	55,735,695	786,843,419	31,652,059	64,102,781	86,073,291	98,246,260	157,945,906	210,659,908	200,949,367	185,123,990	173,628,943	162,984,306	139,568,121	
CY2023 Program Incremental Expiring Savings§									52,883	740,669	754,417	15,086	2,996,908	
Historic Program Incremental Expiring Savings								2,689,064	9,657,659	15,084,707	10,740,630	10,629,551	20,419,276	
Program Total Incremental Expiring Savings#								2,689,064	9,710,542	15,825,376	11,495,047	10,644,637	23,416,185	

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	55,735,695	786,843,419	43,861,273	42,972,714	41,860,867	41,730,740	40,823,249	38,139,307	37,059,258	37,058,860	37,053,050	21,962,600	18,932,091
Historic Program Total Contribution to CPAS‡			84,102,181	81,618,195	78,489,324	66,730,585	59,039,858	53,359,693	49,432,923	48,816,799	36,936,467	33,219,245	26,393,550
Program Total CPAS	55,735,695	786,843,419	127,963,454	124,590,909	120,350,191	108,461,325	99,863,108	91,499,000	86,492,181	85,875,659	73,989,516	55,181,846	45,325,641
CY2023 Program Incremental Expiring Savings§			6,981,829	888,559	1,111,847	130,127	907,491	2,683,943	1,080,049	398	5,810	15,090,449	3,030,509
Historic Program Incremental Expiring Savings			4,622,838	2,483,986	3,128,871	11,758,739	7,690,727	5,680,165	3,926,770	616,124	11,880,333	3,717,221	6,825,695
Program Total Incremental Expiring Savings#			11,604,667	3,372,546	4,240,718	11,888,866	8,598,217	8,364,108	5,006,819	616,522	11,886,143	18,807,671	9,856,205

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	55,735,695	786,843,419	18,930,991	18,930,991	18,930,991	948,988	948,988	948,988	924,249	924,249	0	0	0
Historic Program Total Contribution to CPAS‡			22,778,747	20,873,765	8,621,229	6,335,922	3,362,188	495,205	0	0	0	0	0
Program Total CPAS	55,735,695	786,843,419	41,709,737	39,804,755	27,552,220	7,284,910	4,311,176	1,444,193	924,249	924,249	0	0	0
CY2023 Program Incremental Expiring Savings§			1,100	0	0	17,982,003	0	0	24,739	0	924,249	0	0
Historic Program Incremental Expiring Savings			3,614,803	1,904,982	12,252,536	2,285,307	2,973,734	2,866,983	495,205	0	0	0	0
Program Total Incremental Expiring Savings#			3,615,904	1,904,982	12,252,536	20,267,310	2,973,734	2,866,983	519,944	0	924,249	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*

# Public Housing Upgrades Component

## Introduction

This section presents the results of the impact evaluation of the Public Housing Upgrades (PH) component of the Multifamily Upgrades program for the program year from January 1 to December 31, 2023 (CY2023). The PH component was designed to provide free energy saving products to public housing facilities.

The PH component is offered jointly to customers served by ComEd, Nicor Gas, and Peoples Gas. This report presents the results just for ComEd. The results for the gas utilities will be in separate reports. Because this is public housing, all the savings are Income Eligible.

## Program Savings Detail

Table 7 summarizes the incremental energy and demand savings the PH component achieved in CY2023. The gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim. For the PH component, the reported per-unit savings fell outside of acceptable bounds, so the IL-TRM v11.0 was used to determine the gross verified savings for the PH component in CY2023.

**Table 7. Public Housing Upgrades 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	1,564,668	0.78	1,219,196	1.00			1,219,196
Electric Energy Savings - Converted from Other Fuels§	kWh	0		245,142	1.00			245,142
Electric Energy Savings - Electrification	kWh	0		0				0
Total Electric Energy Savings#	kWh	1,564,668	0.94	1,464,338	1.00			1,464,338
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak**† Demand Savings	kW	180	0.93	168	1.00			168
Summer Peak**† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.

Source: Evaluation team analysis

Figure 2 shows the electric energy savings by measure end use. It includes measure efficiency savings and secondary water kWh. It does not include gas savings converted to kWh.

**Figure 2. Public Housing Upgrades Verified Net Savings by End Use Type – Electric**



Source: Evaluation team analysis

## CPAS

Table 8 to Table 10 show the CPAS for the measures installed in CY2023. The electric CPAS across all measures installed in 2023 is shown in Table 10. The gas contribution to CPAS (converted to equivalent electricity) is shown in Table 9. The combined savings are shown in Table 10

**Table 8. Public Housing Upgrades CPAS – Electric**

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh) <sup>†</sup>	CPAS Verified Net kWh Savings											
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
CY2023 Program Total Contribution to CPAS	1,219,196	13,867,112							1,219,196	1,219,196	1,189,789	1,189,704	1,189,704	1,182,042
Historic Program Total Contribution to CPAS <sup>‡</sup>			2,472,099	5,495,917	6,679,860	7,256,469	7,220,887	7,065,929	6,482,098	5,163,971	4,227,397	4,035,294	2,737,564	
Program Total CPAS	1,219,196	13,867,112	2,472,099	5,495,917	6,679,860	7,256,469	7,220,887	8,285,126	7,701,294	6,353,759	5,417,101	5,224,999	3,919,606	
CY2023 Program Incremental Expiring Savings <sup>§</sup>									0	29,407	84	0	7,663	
Historic Program Incremental Expiring Savings <sup>  </sup>								154,958	583,831	1,318,127	936,574	192,102	1,297,730	
Program Total Incremental Expiring Savings <sup>#</sup>								154,958	583,831	1,347,535	936,658	192,102	1,305,393	

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh) <sup>†</sup>	CPAS Verified Net kWh Savings										
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2023 Program Total Contribution to CPAS	1,219,196	13,867,112	1,176,546	1,172,085	836,326	706,199	526,564	424,353	386,589	383,677	383,677	121,450	121,450
Historic Program Total Contribution to CPAS <sup>‡</sup>			2,058,597	1,407,048	779,093	389,604	279,356	208,789	206,976	194,528	190,255	68,539	59,147
Program Total CPAS	1,219,196	13,867,112	3,235,143	2,579,133	1,615,418	1,095,803	805,920	633,142	593,565	578,205	573,932	189,989	180,597
CY2023 Program Incremental Expiring Savings <sup>§</sup>			5,496	4,461	335,759	130,127	179,635	102,211	37,764	2,912	0	262,228	0
Historic Program Incremental Expiring Savings <sup>  </sup>			678,968	651,549	627,955	389,488	110,248	70,567	1,813	12,448	4,273	121,716	9,392
Program Total Incremental Expiring Savings <sup>#</sup>			684,463	656,010	963,714	519,615	289,883	172,779	39,576	15,360	4,273	383,944	9,392

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh) <sup>†</sup>	CPAS Verified Net kWh Savings										
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
CY2023 Program Total Contribution to CPAS	1,219,196	13,867,112	121,450	121,450	121,450	24,739	24,739	24,739	0	0	0	0	0
Historic Program Total Contribution to CPAS <sup>‡</sup>			40,985	4,181	4,181	0	0	0	0	0	0	0	0
Program Total CPAS	1,219,196	13,867,112	162,435	125,631	125,631	24,739	24,739	24,739	0	0	0	0	0
CY2023 Program Incremental Expiring Savings <sup>§</sup>			0	0	0	96,711	0	0	24,739	0	0	0	0
Historic Program Incremental Expiring Savings <sup>  </sup>			18,162	36,804	0	4,181	0	0	0	0	0	0	0
Program Total Incremental Expiring Savings <sup>#</sup>			18,162	36,804	0	100,892	0	0	24,739	0	0	0	0

<sup>†</sup> Lifetime savings are the sum of CPAS savings through the EUL.

<sup>‡</sup> Historical savings go back to CY2018.

<sup>§</sup> Incremental expiring savings are equal to CPAS Yn-1 - CPAS Yn.

<sup>||</sup> Historic incremental expiring savings are equal to Historic CPAS Yn-1 – Historic CPAS Yn.

<sup>#</sup> 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 9. Public Housing Upgrades 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)	8,364	160,676							8,364	8,364	8,364	8,364	8,364	8,364
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	245,142								245,142	245,142	245,142	245,142	245,142	245,142
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			0	0	0	1,714,544	1,777,096	1,777,096	1,652,839	1,652,839	1,430,633	36,606	37,685	
Program Total Other Fuel CPAS (kWh Equivalent)	245,142	0	0	0	0	1,714,544	1,777,096	2,022,238	1,897,982	1,897,982	1,675,776	281,748	282,827	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)									0	0	0	0	0	
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)									0	0	0	0	0	
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#									0	124,257	0	222,206	1,394,028	-1,079
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†									0	124,257	0	222,206	1,394,028	-1,079

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)	8,364	160,676	8,364	8,364	8,364	8,364	7,962	7,962	7,962	7,593	7,593	7,593	7,593
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	245,142		245,142	245,142	245,142	245,142	233,378	233,378	233,378	222,552	222,552	222,552	222,552
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			43,394	43,438	32,700	32,700	32,700	32,392	32,392	32,392	16,494	16,494	16,494
Program Total Other Fuel CPAS (kWh Equivalent)	245,142	0	288,536	288,580	277,842	277,842	266,078	265,770	265,770	254,944	239,046	239,046	239,046
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	0	401	0	0	369	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	0	11,764	0	0	10,826	0	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			-5,709	-44	10,738	0	0	307	0	0	15,898	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			-5,709	-44	10,738	0	11,764	307	0	10,826	15,898	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)	8,364	160,676	7,593	7,593	7,593	0	0	0	0	0	0	0	0	
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	245,142		222,552	222,552	222,552	0	0	0	0	0	0	0	0	
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			16,494	0	0	0	0	0	0	0	0	0	0	
Program Total Other Fuel CPAS (kWh Equivalent)	245,142	0	239,046	222,552	222,552	0	0	0	0	0	0	0	0	
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	7,593	0	0	0	0	0	0	0	
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	222,552	0	0	0	0	0	0	0	
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			0	16,494	0	0	0	0	0	0	0	0	0	
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			0	16,494	0	222,552	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 10. Public Housing Upgrades 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	1,464,338	18,792,417							1,464,338	1,464,338	1,434,931	1,434,847	1,434,847	1,427,184
Historic Program Total Contribution to CPAS‡			2,472,099	5,495,917	6,679,860	8,971,013	10,166,691	10,011,733	9,298,518	7,977,537	6,818,757	5,235,812	3,946,876	
Program Total CPAS	1,464,338	18,792,417	2,472,099	5,495,917	6,679,860	8,971,013	10,166,691	11,476,071	10,762,857	9,412,468	8,253,604	6,670,659	5,374,060	
CY2023 Program Incremental Expiring Savings§									0	29,407	84	0	7,663	
Historic Program Incremental Expiring Savings									154,958	713,215	1,320,981	1,158,780	1,582,946	1,288,936
Program Total Incremental Expiring Savings#									154,958	713,215	1,350,388	1,158,864	1,582,946	1,296,598

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	1,464,338	18,792,417	1,421,689	1,417,227	1,081,468	951,341	773,778	669,495	631,732	631,732	631,732	369,504	369,504
Historic Program Total Contribution to CPAS‡			3,314,278	2,663,086	2,024,606	1,613,831	1,510,923	1,452,014	1,450,201	1,437,753	1,174,828	1,053,112	1,043,303
Program Total CPAS	1,464,338	18,792,417	4,735,966	4,080,314	3,106,074	2,565,173	2,284,702	2,121,509	2,081,933	2,069,485	1,806,560	1,422,616	1,412,807
CY2023 Program Incremental Expiring Savings§			5,496	4,461	335,759	130,127	177,563	104,283	37,764	0	0	262,228	0
Historic Program Incremental Expiring Savings			632,599	651,191	638,481	410,775	102,908	58,909	1,813	12,448	262,925	121,716	9,809
Program Total Incremental Expiring Savings#			638,094	655,652	974,240	540,901	280,471	163,192	39,576	12,448	262,925	383,944	9,809

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	1,464,338	18,792,417	369,504	369,504	369,504	24,739	24,739	24,739	0	0	0	0	0	
Historic Program Total Contribution to CPAS‡			1,025,141	971,671	4,181	0	0	0	0	0	0	0	0	
Program Total CPAS	1,464,338	18,792,417	1,394,645	1,341,175	373,686	24,739	24,739	24,739	0	0	0	0	0	
CY2023 Program Incremental Expiring Savings§			0	0	0	344,765	0	0	24,739	0	0	0	0	
Historic Program Incremental Expiring Savings			18,162	53,470	967,490	4,181	0	0	0	0	0	0	0	
Program Total Incremental Expiring Savings#			18,162	53,470	967,490	348,947	0	0	24,739	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

# Multifamily Upgrades Program Excluding Public Housing Upgrades Component

## Introduction

This section presents the results of the impact evaluation of the Multifamily Upgrades program, excluding any savings achieved through the PH component, for the program year from January 1 to December 31, 2023 (CY2023). The program was designed to provide free energy efficiency measures to multifamily buildings.

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

## Program Savings Detail

Table 11 summarizes the incremental energy and demand savings the Multifamily Upgrades program achieved in CY2023, excluding the PH component. The gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim. Table 12 summarizes the savings achieved from income eligible participants, and Table 13 summarizes savings from non-income eligible participants. Together, they make up the total shown in **Error! Reference source not found.** Guidehouse applied the CY2022 realization rates for the Multifamily Upgrades program to determine the gross verified savings for CY2023.

**Table 11. Multifamily Upgrades Excluding Public Housing 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	29,180,161	1.10	32,157,465	0.99			31,824,837
Electric Energy Savings - Converted from Other Fuels§	kWh	21,727,226	0.93	20,193,262				20,193,262
Electric Energy Savings - Electrification	kWh	1,829,171	1.05	1,920,629				1,920,629
Total Electric Energy Savings#	kWh	52,736,558	1.03	54,271,356	0.99			53,938,728
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak*†† Demand Savings	kW	2,171	1.03	2,240	0.98			2,199
Summer Peak*†† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.

Source: Evaluation team analysis

**Table 12. Multifamily Upgrades Excluding Public Housing Total Annual 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	23,486,486	1.13	26,462,175	1.00			26,462,175
Electric Energy Savings - Converted from Other Fuel§	kWh	21,727,226	0.93	20,193,262	1.00			20,193,262
Electric Energy Savings - Electrification	kWh	1,829,171	1.05	1,920,629	1.00			1,920,629
Total Electric Energy Savings#	kWh	47,042,883	1.03	48,576,066	1.00			48,576,066
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak*†† Demand Savings	kW	1,532	1.05	1,603	0.99			1,594
Summer Peak*†† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.  
 Source: Evaluation team analysis

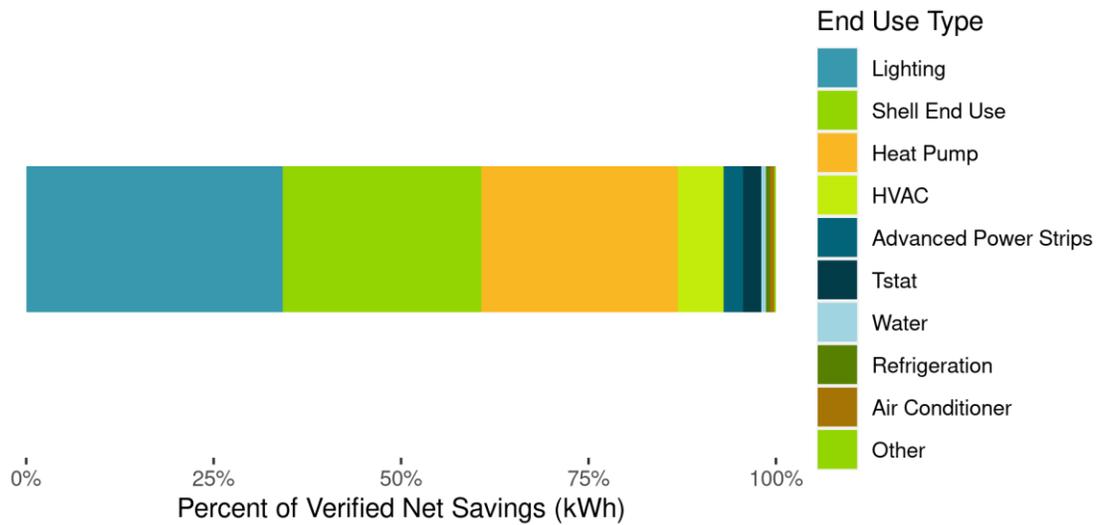
**Table 13. Multifamily Upgrades Excluding Public Housing Total Annual Incremental Electric Savings - Non-Income Eligible**

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	5,693,675	1.00	5,695,290	0.94			5,362,662
Electric Energy Savings - Converted from Other Fuel§	kWh	0		0				0
Electric Energy Savings - Electrification	kWh	0		0				
Total Electric Energy Savings#	kWh	5,693,675	1.00	5,695,290	0.94			5,362,662
Total Electric Energy Savings Including Carryover#	kWh							
Summer Peak*†† Demand Savings	kW	639	1.00	638	0.95			605
Summer Peak*†† Demand Savings Including Carryover	kW							

Footnotes are defined similarly as found in Table 1.  
 Source: Evaluation team analysis

Figure 3 shows the electric energy savings by measure end use. It includes measure efficiency savings and secondary water kWh. It does not include gas savings converted to kWh.

**Figure 3. Multifamily Upgrades Excluding Public Housing Verified Net Savings by End Use Type – Electric**



Source: Evaluation team analysis

## CPAS

Table 14 to Table 16 show the CPAS for the measures installed in CY2023. Table 14 shows the electric CPAS across all measures installed in 2022. Table 15 shows the gas contribution to CPAS (converted to equivalent electricity). Table 16 shows the combined savings.

**Table 14. Multifamily Upgrades Excluding Public Housing 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	34,078,094	443,632,948							33,745,466	33,692,583	33,059,676	33,033,099	33,018,012	30,059,880	
Historic Program Total Contribution to CPAS‡			16,220,536	26,116,232	37,376,975	46,151,322	70,945,305	68,930,669	63,457,078	57,546,767	47,964,916	40,144,186	31,069,020		
Program Total CPAS	34,078,094	443,632,948	16,220,536	26,116,232	37,376,975	46,151,322	70,945,305	102,676,135	97,149,661	90,606,443	80,998,015	73,162,198	61,128,900		
CY2023 Program Incremental Expiring Savings§									52,883	632,907	26,578	15,086	2,958,133		
Historic Program Incremental Expiring Savings									2,014,636	5,473,591	5,910,311	9,581,850	7,820,730	9,075,166	
Program Total Incremental Expiring Savings#									2,014,636	5,526,474	6,543,218	9,608,428	7,835,817	12,033,298	

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	34,078,094	443,632,948	24,729,599	23,845,501	23,069,413	23,069,413	22,628,334	21,601,211	20,558,925	20,558,527	20,552,717	11,368,274	8,761,405		
Historic Program Total Contribution to CPAS‡			27,619,043	26,465,920	23,989,269	14,619,093	12,404,109	11,118,845	10,247,184	9,754,846	6,673,657	6,495,757	6,078,159		
Program Total CPAS	34,078,094	443,632,948	52,348,641	50,311,420	47,058,682	37,688,505	35,032,443	32,720,055	30,806,109	30,313,373	27,226,374	17,864,031	14,839,564		
CY2023 Program Incremental Expiring Savings§			5,330,281	884,098	776,088	0	441,079	1,027,123	1,042,285	398	5,810	9,184,443	2,606,869		
Historic Program Incremental Expiring Savings			3,449,978	1,153,123	2,476,651	9,370,177	2,214,984	1,285,264	871,661	492,337	3,081,189	177,900	417,598		
Program Total Incremental Expiring Savings#			8,780,259	2,037,221	3,252,738	9,370,177	2,656,062	2,312,388	1,913,947	492,735	3,086,999	9,362,343	3,024,467		

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	34,078,094	443,632,948	8,760,305	8,760,305	8,760,305	0	0	0	0	0	0	0	0		
Historic Program Total Contribution to CPAS‡			5,132,409	3,723,413	268,481	29,894	29,894	29,894	0	0	0	0	0		
Program Total CPAS	34,078,094	443,632,948	13,892,713	12,483,718	9,028,785	29,894	29,894	29,894	0	0	0	0	0		
CY2023 Program Incremental Expiring Savings§			1,100	0	0	8,760,305	0	0	0	0	0	0	0		
Historic Program Incremental Expiring Savings			945,750	1,408,995	3,454,933	238,587	0	0	29,894	0	0	0	0		
Program Total Incremental Expiring Savings#			946,850	1,408,995	3,454,933	8,998,892	0	0	29,894	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.

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

Source: Evaluation team analysis

**Table 15. Multifamily Upgrades Excluding Public Housing 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)	688,955	11,068,511							688,955	688,955	686,281	661,452	661,452	660,390	
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	20,193,262								20,193,262	20,193,262	20,114,907	19,387,152	19,387,152	19,356,039	
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			12,959,424	32,490,632	42,016,456	43,123,925	78,002,618	77,483,148	74,007,168	66,150,899	66,150,899	64,928,209	54,880,750		
Program Total Other Fuel CPAS (kWh Equivalent)	20,193,262	0	12,959,424	32,490,632	42,016,456	43,123,925	78,002,618	97,676,410	94,200,430	86,265,806	85,538,051	84,315,361	74,236,788		
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)									0	2,673	24,830	0	1,062		
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)									0	78,355	727,755	0	31,113		
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#									519,471	3,475,980	7,856,269	0	1,222,690	10,047,460	
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†									519,471	3,475,980	7,934,624	727,755	1,222,690	10,078,573	

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)	688,955	11,068,511	604,230	604,230	604,230	604,230	594,375	541,406	541,406	541,406	541,406	541,406	348,851	334,397	
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	20,193,262		17,709,986	17,709,986	17,709,986	17,709,986	17,421,137	15,868,601	15,868,601	15,868,601	15,868,601	15,868,601	10,224,823	9,801,182	
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			54,381,148	53,701,790	53,688,262	51,689,188	46,323,693	41,999,667	38,946,371	38,835,033	30,056,060	26,638,455	20,239,749		
Program Total Other Fuel CPAS (kWh Equivalent)	20,193,262	0	72,091,134	71,411,776	71,398,248	69,399,174	63,744,830	57,868,268	54,814,972	54,703,634	45,924,661	36,863,277	30,040,931		
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			56,160	0	0	0	9,855	52,969	0	0	0	0	192,555	14,454	

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 (kWh Equivalent)			1,646,053	0	0	0	288,849	1,552,536	0	0	0	5,643,778	423,641
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			499,602	679,358	13,527	1,999,074	5,365,495	4,324,026	3,053,296	111,338	8,778,973	3,417,605	6,398,705
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			2,145,654	679,358	13,527	1,999,074	5,654,344	5,876,562	3,053,296	111,338	8,778,973	9,061,384	6,822,346

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)	688,955	11,068,511	334,397	334,397	334,397	31,534	31,534	31,534	31,534	31,534	0	0	0
CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡	20,193,262		9,801,182	9,801,182	9,801,182	924,249	924,249	924,249	924,249	924,249	0	0	0
Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§			17,588,858	17,146,170	8,348,567	6,306,028	3,332,294	465,312	0	0	0	0	0
Program Total Other Fuel CPAS (kWh Equivalent)	20,193,262	0	27,390,040	26,947,352	18,149,749	7,230,278	4,256,544	1,389,561	924,249	924,249	0	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (Therms)			0	0	0	302,864	0	0	0	0	31,534	0	0
CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)			0	0	0	8,876,933	0	0	0	0	924,249	0	0
Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)#			2,650,891	442,689	8,797,603	2,042,538	2,973,734	2,866,983	465,312	0	0	0	0
Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)*†			2,650,891	442,689	8,797,603	10,919,471	2,973,734	2,866,983	465,312	0	924,249	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.

\*† Portfolio total incremental expiring savings are equal to current year total incremental expiring savings plus historic total incremental expiring savings.

Source: Evaluation team analysis

**Table 16. Multifamily Upgrades Excluding Public Housing 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	54,271,356	768,051,002							53,938,728	53,885,845	53,174,583	52,420,250	52,405,164	49,415,918
Historic Program Total Contribution to CPAS‡			29,179,961	58,606,864	79,393,431	89,275,247	148,947,923	146,413,817	137,464,246	123,697,666	114,115,816	105,072,395	85,949,770	
Program Total CPAS	54,271,356	768,051,002	29,179,961	58,606,864	79,393,431	89,275,247	148,947,923	200,352,544	191,350,091	176,872,249	166,536,066	157,477,559	135,365,688	
CY2023 Program Incremental Expiring Savings§									52,883	711,262	754,333	15,086	2,989,246	
Historic Program Incremental Expiring Savings								2,534,107	8,949,571	13,766,580	9,581,850	9,043,420	19,122,626	
Program Total Incremental Expiring Savings#								2,534,107	9,002,454	14,477,842	10,336,183	9,058,507	22,111,871	

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	54,271,356	768,051,002	42,439,585	41,555,487	40,779,399	40,779,399	40,049,471	37,469,812	36,427,526	36,427,128	36,421,318	21,593,096	18,562,587
Historic Program Total Contribution to CPAS‡			82,000,190	80,167,709	77,677,531	66,308,281	58,727,802	53,118,512	49,193,555	48,589,879	36,729,717	33,134,212	26,317,908
Program Total CPAS	54,271,356	768,051,002	124,439,775	121,723,196	118,456,930	107,087,680	98,777,273	90,588,323	85,621,081	85,017,007	73,151,035	54,727,308	44,880,495
CY2023 Program Incremental Expiring Savings§			6,976,333	884,098	776,088	0	729,928	2,579,659	1,042,285	398	5,810	14,828,222	3,030,509
Historic Program Incremental Expiring Savings			3,949,579	1,832,481	2,490,178	11,369,251	7,580,478	5,609,290	3,924,957	603,676	11,860,162	3,595,505	6,816,304
Program Total Incremental Expiring Savings#			10,925,913	2,716,579	3,266,266	11,369,251	8,310,406	8,188,950	4,967,242	604,074	11,865,972	18,423,727	9,846,813

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	54,271,356	768,051,002	18,561,487	18,561,487	18,561,487	924,249	924,249	924,249	924,249	924,249	0	0	0
Historic Program Total Contribution to CPAS‡			22,721,267	20,869,583	8,617,048	6,335,922	3,362,188	495,205	0	0	0	0	0
Program Total CPAS	54,271,356	768,051,002	41,282,754	39,431,070	27,178,534	7,260,171	4,286,437	1,419,454	924,249	924,249	0	0	0
CY2023 Program Incremental Expiring Savings§			1,100	0	0	17,637,238	0	0	0	0	924,249	0	0
Historic Program Incremental Expiring Savings			3,596,641	1,851,684	12,252,536	2,281,126	2,973,734	2,866,983	495,205	0	0	0	0
Program Total Incremental Expiring Savings#			3,597,741	1,851,684	12,252,536	19,918,363	2,973,734	2,866,983	495,205	0	924,249	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.

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

Source: Evaluation team analysis