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| **ComEd Multifamily Upgrades Program Impact Report**  Energy Efficiency/Demand Response Plan:  Program Year 2023 (CY2023)  (1/1/2023-12/31/2023) | | | | | | | |
| Prepared for:  ComEd  DRAFT  March 15, 2024 | | | | | | | |
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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.[[1]](#footnote-2) 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 for the Multifamily Upgrades program to determine the gross verified savings for CY2023.

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 | 30,564,183 | 1.09 | 33,203,428 | 0.99 |  |  | 32,854,354 |
| Electric Energy Savings -  Converted from Other Fuel§ | kWh | 21,810,151 | 0.98 | 21,381,916 |  |  |  | 20,525,475 |
| Electric Energy Savings - Indirect from Fuel Switching (through Electrification)|| | kWh | 1,925,805 | 1.05 | 2,022,095 |  |  |  | 2,022,095 |
| Total Electric Energy Savings# | kWh | 54,300,138 | 1.04 | 56,375,165 | 0.98 |  |  | 55,169,651 |
| 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 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) 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 from fuel switching measures excluding direct efficiency savings. Calculated from net electric savings from 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 Other Fuel, and the Electrification Savings from fuel switching. 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 | 24,870,508 | 1.11 | 27,508,138 | 1.00 |  |  | 27,491,693 |
| Electric Energy Savings -  Converted from Other Fuel§ | kWh | 21,810,151 | 0.98 | 21,381,916 | 0.96 |  |  | 20,525,475 |
| Electric Energy Savings - Indirect from Fuel Switching (through Electrification)|| | kWh | 1,925,805 | 1.05 | 2,022,095 | 1.00 |  |  | 2,022,095 |
| Total Electric Energy Savings# | kWh | 48,606,464 | 1.05 | 50,912,149 | 0.98 |  |  | 50,039,263 |
| 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*

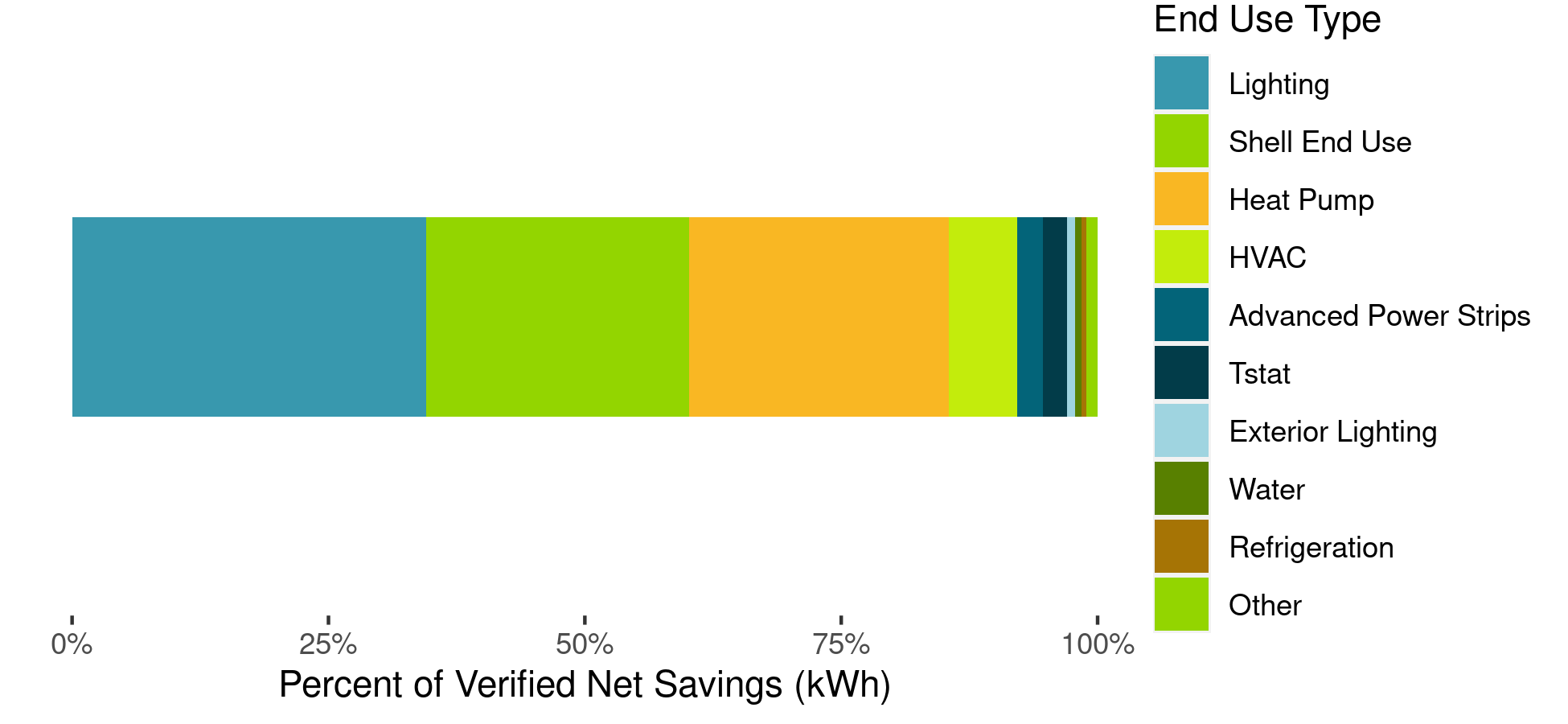
Table 3. Multifamily Upgrades Total Annual Incremental Electric Savings - Non-Income Eligible

| 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 - Indirect from Fuel Switching (through 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

Table4 to Table 6 show the cumulative persisting annual savings (CPAS) for the measures installed in CY2023. Table4 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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Contribution to CPAS | 35,225,523 | 456,217,140 |  |  |  |  |  | 34,876,450 | 34,823,567 | 34,161,253 | 34,134,591 | 34,119,504 | 31,153,709 |
| Historic Program Total Contribution to CPAS‡ |  |  | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 56,816,979 | 55,455,476 | 51,994,930 | 47,728,243 | 39,214,182 | 32,136,328 | 23,788,716 |
| Program Total CPAS | 35,225,523 | 456,217,140 | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 56,816,979 | 90,331,926 | 86,818,497 | 81,889,496 | 73,348,772 | 66,255,833 | 54,942,425 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 52,883 | 662,314 | 26,662 | 15,086 | 2,965,795 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | 1,361,503 | 3,460,546 | 4,266,686 | 8,514,062 | 7,077,853 | 8,347,612 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | 1,361,503 | 3,513,429 | 4,929,001 | 8,540,724 | 7,092,940 | 11,313,408 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | 35,225,523 | 456,217,140 | 25,817,932 | 24,929,373 | 23,817,526 | 23,687,400 | 23,066,686 | 21,963,044 | 20,882,995 | 20,879,685 | 20,873,875 | 11,427,216 | 8,882,855 |
| Historic Program Total Contribution to CPAS‡ |  |  | 20,782,537 | 20,090,455 | 18,624,407 | 9,532,207 | 8,495,889 | 7,744,135 | 7,065,137 | 6,667,236 | 3,778,003 | 3,667,394 | 3,470,523 |
| Program Total CPAS | 35,225,523 | 456,217,140 | 46,600,470 | 45,019,828 | 42,441,933 | 33,219,606 | 31,562,575 | 29,707,179 | 27,948,132 | 27,546,921 | 24,651,878 | 15,094,610 | 12,353,378 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 5,335,777 | 888,559 | 1,111,847 | 130,127 | 620,714 | 1,103,642 | 1,080,049 | 3,310 | 5,810 | 9,446,659 | 2,544,361 |
| Historic Program Incremental Expiring Savings|| |  |  | 3,006,179 | 692,082 | 1,466,048 | 9,092,200 | 1,036,318 | 751,754 | 678,998 | 397,900 | 2,889,234 | 110,609 | 196,871 |
| Program Total Incremental Expiring Savings# |  |  | 8,341,955 | 1,580,641 | 2,577,895 | 9,222,327 | 1,657,031 | 1,855,395 | 1,759,048 | 401,211 | 2,895,043 | 9,557,268 | 2,741,232 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | 35,225,523 | 456,217,140 | 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‡ |  |  | 3,455,105 | 3,454,933 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 35,225,523 | 456,217,140 | 12,336,859 | 12,336,687 | 8,881,754 | 24,739 | 24,739 | 24,739 | 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|| |  |  | 15,418 | 172 | 3,454,933 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 16,519 | 172 | 3,454,933 | 8,857,016 | 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

Table 5. Multifamily Upgrades CPAS – Other Fuel (Gas + Propane)

|  | | | CPAS Verified Net Therms Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (Therms) | Lifetime Net Savings† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Other Fuel Contribution to CPAS (Therms) | 729,509 | 11,272,335 |  |  |  |  |  | 700,289 | 700,289 | 697,616 | 672,786 | 672,786 | 671,725 |
| CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡ | 21,381,916 |  |  |  |  |  |  | 20,525,475 | 20,525,475 | 20,447,120 | 19,719,365 | 19,719,365 | 19,688,252 |
| Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,381,916 | 0 | 0 | 0 | 0 | 0 | 0 | 20,525,475 | 20,525,475 | 20,447,120 | 19,719,365 | 19,719,365 | 19,688,252 |
| 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)# |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  |  |  |  |  |  | 0 | 0 | 78,355 | 727,755 | 0 | 31,113 |

| Savings Category | Verified Gross Savings (Therms) | Lifetime Net Savings† | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CY2023 Program Total Other Fuel Contribution to CPAS (Therms) | 729,509 | 11,272,335 | 615,565 | 615,565 | 615,565 | 615,565 | 605,308 | 551,462 | 551,462 | 551,093 | 551,093 | 358,538 | 341,990 |
| CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡ | 21,381,916 |  | 18,042,199 | 18,042,199 | 18,042,199 | 18,042,199 | 17,741,586 | 16,163,357 | 16,163,357 | 16,152,531 | 16,152,531 | 10,508,752 | 10,023,734 |
| Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,381,916 | 0 | 18,042,199 | 18,042,199 | 18,042,199 | 18,042,199 | 17,741,586 | 16,163,357 | 16,163,357 | 16,152,531 | 16,152,531 | 10,508,752 | 10,023,734 |
| CY2023 Program Incremental Expiring Other Fuel Savings (Therms) |  |  | 56,160 | 0 | 0 | 0 | 10,256 | 53,846 | 0 | 369 | 0 | 192,555 | 16,548 |
| CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)|| |  |  | 1,646,053 | 0 | 0 | 0 | 300,613 | 1,578,229 | 0 | 10,826 | 0 | 5,643,778 | 485,018 |
| Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)# |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  | 1,646,053 | 0 | 0 | 0 | 300,613 | 1,578,229 | 0 | 10,826 | 0 | 5,643,778 | 485,018 |

| 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) | 729,509 | 11,272,335 | 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)‡ | 21,381,916 |  | 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)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,381,916 | 0 | 10,023,734 | 10,023,734 | 10,023,734 | 924,249 | 924,249 | 924,249 | 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)# |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  | 0 | 0 | 0 | 9,099,485 | 0 | 0 | 0 | 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

|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Contribution to CPAS | 56,375,165 | 784,762,046 |  |  |  |  |  | 55,169,651 | 55,116,768 | 54,386,464 | 53,632,047 | 53,616,961 | 50,623,770 |
| Historic Program Total Contribution to CPAS‡ |  |  | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 91,791,904 | 1,115,215,603 | 1,101,493,438 | 1,078,378,447 | 1,027,791,170 | 1,020,001,258 | 982,345,488 |
| Program Total CPAS | 56,375,165 | 784,762,046 | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 91,791,904 | 1,170,385,254 | 1,156,610,205 | 1,132,764,911 | 1,081,423,217 | 1,073,618,219 | 1,032,969,258 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 52,883 | 730,304 | 754,417 | 15,086 | 2,993,191 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | -1,023,423,700 | 13,722,166 | 23,114,991 | 50,587,277 | 7,789,912 | 37,655,770 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | -1,023,423,700 | 13,775,048 | 23,845,295 | 51,341,694 | 7,804,998 | 40,648,961 |

| 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 | 56,375,165 | 784,762,046 | 43,641,941 | 42,753,382 | 41,797,336 | 41,729,599 | 40,808,272 | 38,126,401 | 37,046,352 | 37,032,216 | 37,026,406 | 21,935,968 | 18,906,589 |
| Historic Program Total Contribution to CPAS‡ |  |  | 732,034,671 | 731,496,605 | 730,033,601 | 719,371,958 | 670,968,866 | 628,843,703 | 567,528,187 | 566,142,609 | 554,391,364 | 295,831,589 | 262,295,248 |
| Program Total CPAS | 56,375,165 | 784,762,046 | 775,676,612 | 774,249,987 | 771,830,937 | 761,101,557 | 711,777,138 | 666,970,104 | 604,574,539 | 603,174,824 | 591,417,770 | 317,767,557 | 281,201,836 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 6,981,829 | 888,559 | 956,046 | 67,737 | 921,327 | 2,681,871 | 1,080,049 | 14,136 | 5,810 | 15,090,437 | 3,029,380 |
| Historic Program Incremental Expiring Savings|| |  |  | 250,310,817 | 538,066 | 1,463,004 | 10,661,643 | 48,403,092 | 42,125,162 | 61,315,516 | 1,385,578 | 11,751,245 | 258,559,775 | 33,536,342 |
| Program Total Incremental Expiring Savings# |  |  | 257,292,646 | 1,426,625 | 2,419,050 | 10,729,380 | 49,324,419 | 44,807,033 | 62,395,565 | 1,399,715 | 11,757,054 | 273,650,212 | 36,565,721 |

| 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 | 56,375,165 | 784,762,046 | 18,905,488 | 18,905,488 | 18,905,488 | 948,988 | 948,988 | 948,988 | 924,249 | 924,249 | 0 | 0 | 0 |
| Historic Program Total Contribution to CPAS‡ |  |  | 262,279,829 | 262,279,657 | 250,285,473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 56,375,165 | 784,762,046 | 281,185,318 | 281,185,146 | 269,190,961 | 948,988 | 948,988 | 948,988 | 924,249 | 924,249 | 0 | 0 | 0 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 1,100 | 0 | 0 | 17,956,500 | 0 | 0 | 24,739 | 0 | 924,249 | 0 | 0 |
| Historic Program Incremental Expiring Savings|| |  |  | 15,418 | 172 | 11,994,185 | 250,285,473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 16,519 | 172 | 11,994,185 | 268,241,973 | 0 | 0 | 24,739 | 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 CY2022. The gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim. Guidehouse applied the CY2022 realization rates for the Multifamily Upgrades program to determine the gross verified savings for CY2023.

Table 7. Public Housing Upgrades Total Annual Incremental Electric Savings - Total

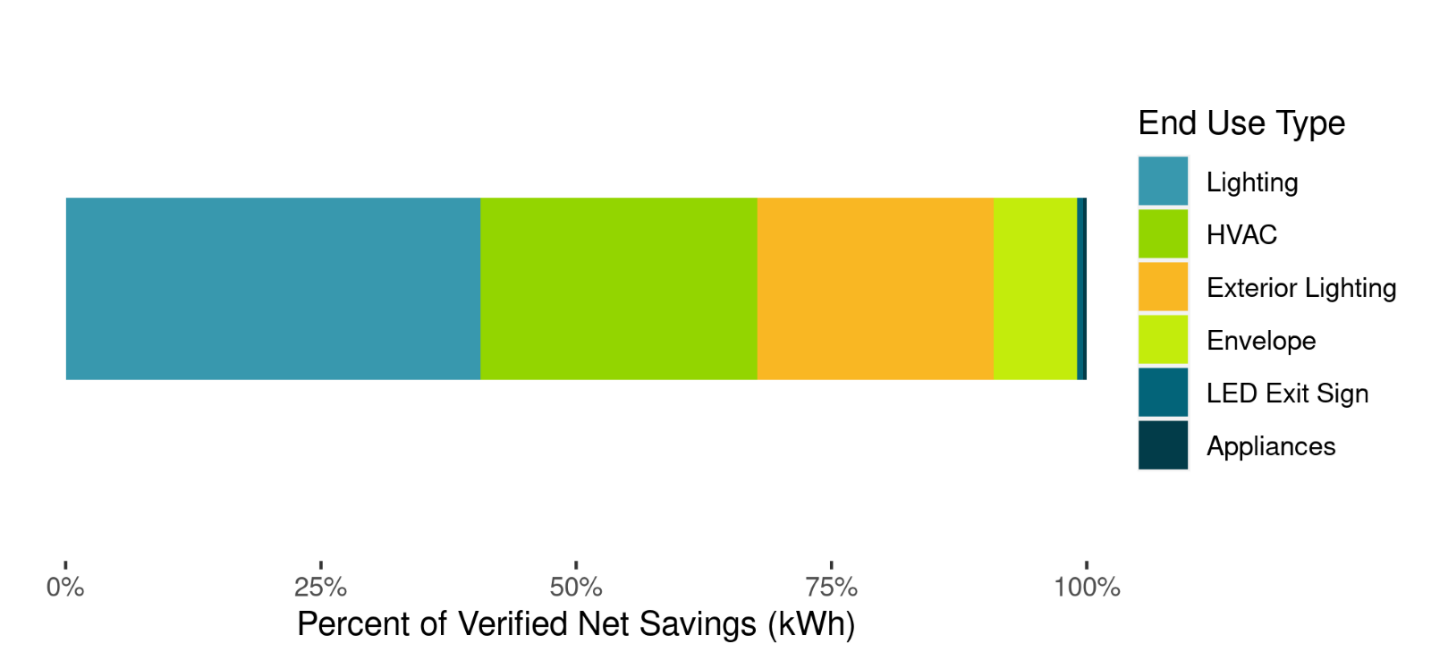
| Savings Category | Units | Ex Ante Gross Savings\* | Program Gross Realization Rate | Verified Gross Savings\* | Program Net-to-Gross Ratio (NTG) | CY2021 Net Carryover Savings | CY2022 Net Carryover Savings | Verified Net Savings† |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Electric Energy Savings - Direct‡ | kWh | 1,564,668 | 0.78 | 1,219,196 | 1.00 |  |  | 1,219,196 |
| Electric Energy Savings -  Converted from Other Fuel§ | kWh | 0 |  | 245,142 |  |  |  | 245,142 |
| Electric Energy Savings - Indirect from Fuel Switching (through Electrification)|| | kWh | 0 |  | 0 |  |  |  | 0 |
| Total Electric Energy Savings# | kWh | 1,564,668 | 0.79 | 1,232,064 | 1.00 |  |  | 1,232,064 |
| 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 10 to Table 12 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 11. The combined savings are shown in Table 12.

Table 10. Public Housing Upgrades CPAS – Electric

|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 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‡ |  |  | 2,472,099 | 5,495,917 | 6,679,860 | 7,256,469 | 7,220,887 | 7,065,929 | 6,482,099 | 5,163,970 | 4,227,397 | 4,035,295 | 2,737,565 |
| Program Total CPAS | 1,219,196 | 13,867,112 | 2,472,099 | 5,495,917 | 6,679,860 | 7,256,469 | 7,220,887 | 8,285,125 | 7,701,295 | 6,353,759 | 5,417,102 | 5,224,999 | 3,919,606 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 0 | 29,407 | 84 | 0 | 7,663 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | 154,958 | 583,831 | 1,318,128 | 936,573 | 192,102 | 1,297,730 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | 154,958 | 583,831 | 1,347,536 | 936,657 | 192,102 | 1,305,393 |

| 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 | 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‡ |  |  | 2,058,597 | 1,407,048 | 779,093 | 389,605 | 279,356 | 208,789 | 206,976 | 194,528 | 190,255 | 68,539 | 59,148 |
| Program Total CPAS | 1,219,196 | 13,867,112 | 3,235,143 | 2,579,133 | 1,615,419 | 1,095,804 | 805,921 | 633,142 | 593,565 | 578,205 | 573,932 | 189,989 | 180,597 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 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|| |  |  | 678,968 | 651,549 | 627,955 | 389,488 | 110,248 | 70,568 | 1,813 | 12,448 | 4,273 | 121,716 | 9,392 |
| Program Total Incremental Expiring Savings# |  |  | 684,464 | 656,010 | 963,714 | 519,615 | 289,883 | 172,779 | 39,577 | 15,360 | 4,273 | 383,944 | 9,392 |

| 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 | 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‡ |  |  | 40,985 | 4,181 | 4,181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 1,219,196 | 13,867,112 | 162,434 | 125,631 | 125,631 | 24,739 | 24,739 | 24,739 | 0 | 0 | 0 | 0 | 0 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 0 | 0 | 0 | 96,711 | 0 | 0 | 24,739 | 0 | 0 | 0 | 0 |
| Historic Program Incremental Expiring Savings|| |  |  | 18,163 | 36,804 | 0 | 4,181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 18,163 | 36,804 | 0 | 100,892 | 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

Table 11. Public Housing Upgrades CPAS – Other Fuel (Gas + Propane)

|  | | | CPAS Verified Net Therms Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (Therms) | Lifetime Net 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)§ |  |  |  |  |  | 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† | 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† | 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 |  |  |  |  |  |  |  |  |  |  |
| 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 12. Public Housing Upgrades CPAS – Total

|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Contribution to CPAS | 1,232,064 | 16,729,298 |  |  |  |  |  | 1,232,064 | 1,232,064 | 1,213,023 | 1,212,938 | 1,212,938 | 1,208,993 |
| Historic Program Total Contribution to CPAS‡ |  |  | 2,472,099 | 5,495,917 | 6,679,860 | 8,971,013 | 8,997,983 | 8,843,025 | 8,134,938 | 6,816,810 | 5,658,031 | 4,071,900 | 2,775,249 |
| Program Total CPAS | 1,232,064 | 16,729,298 | 2,472,099 | 5,495,917 | 6,679,860 | 8,971,013 | 8,997,983 | 10,075,089 | 9,367,002 | 8,029,832 | 6,870,969 | 5,284,839 | 3,984,243 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 0 | 19,042 | 84 | 0 | 3,945 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | 154,958 | 708,087 | 1,318,128 | 1,158,779 | 1,586,130 | 1,296,651 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | 154,958 | 708,087 | 1,337,170 | 1,158,863 | 1,586,130 | 1,300,596 |

| 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 | 1,232,064 | 16,729,298 | 1,203,498 | 1,199,036 | 1,019,079 | 951,341 | 759,942 | 657,731 | 619,967 | 606,229 | 606,229 | 344,002 | 344,002 |
| Historic Program Total Contribution to CPAS‡ |  |  | 2,101,991 | 1,450,485 | 811,793 | 422,304 | 312,056 | 241,181 | 239,368 | 226,920 | 206,749 | 85,033 | 75,642 |
| Program Total CPAS | 1,232,064 | 16,729,298 | 3,305,488 | 2,649,522 | 1,830,871 | 1,373,646 | 1,071,999 | 898,912 | 859,335 | 833,149 | 812,978 | 429,035 | 419,643 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 5,496 | 4,461 | 179,958 | 67,737 | 191,399 | 102,211 | 37,764 | 13,738 | 0 | 262,228 | 0 |
| Historic Program Incremental Expiring Savings|| |  |  | 673,259 | 651,505 | 638,692 | 389,488 | 110,248 | 70,875 | 1,813 | 12,448 | 20,171 | 121,716 | 9,392 |
| Program Total Incremental Expiring Savings# |  |  | 678,754 | 655,967 | 818,650 | 457,225 | 301,647 | 173,087 | 39,577 | 26,186 | 20,171 | 383,944 | 9,392 |

| 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 | 1,232,064 | 16,729,298 | 344,002 | 344,002 | 344,002 | 24,739 | 24,739 | 24,739 | 0 | 0 | 0 | 0 | 0 |
| Historic Program Total Contribution to CPAS‡ |  |  | 57,479 | 4,181 | 4,181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 1,232,064 | 16,729,298 | 401,480 | 348,183 | 348,183 | 24,739 | 24,739 | 24,739 | 0 | 0 | 0 | 0 | 0 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 0 | 0 | 0 | 319,263 | 0 | 0 | 24,739 | 0 | 0 | 0 | 0 |
| Historic Program Incremental Expiring Savings|| |  |  | 18,163 | 53,298 | 0 | 4,181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 18,163 | 53,298 | 0 | 323,444 | 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 13 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 14 summarizes the savings achieved from income eligible participants, and Table 15 summarizes savings from non-income eligible participants. Together, they make up the total shown in Table 13. Guidehouse applied the CY2022 realization rates for the Multifamily Upgrades program to determine the gross verified savings for CY2023.

Table 13. 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 | 28,999,514 | 1.10 | 31,984,232 | 0.99 |  |  | 31,635,158 |
| Electric Energy Savings -  Converted from Other Fuel§ | kWh | 21,810,151 | 0.97 | 21,136,773 |  |  |  | 20,280,333 |
| Electric Energy Savings - Indirect from Fuel Switching (through Electrification)|| | kWh | 1,925,805 | 1.05 | 2,022,095 |  |  |  | 2,022,095 |
| Total Electric Energy Savings# | kWh | 52,735,470 | 1.04 | 54,910,827 | 0.98 |  |  | 53,705,312 |
| 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 14. 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 | 23,305,840 | 1.13 | 26,288,942 | 1.00 |  |  | 26,272,497 |
| Electric Energy Savings -  Converted from Other Fuel§ | kWh | 21,810,151 | 0.97 | 21,136,773 | 0.96 |  |  | 20,280,333 |
| Electric Energy Savings - Indirect from Fuel Switching (through Electrification)|| | kWh | 1,925,805 | 1.05 | 2,022,095 | 1.00 |  |  | 2,022,095 |
| Total Electric Energy Savings# | kWh | 47,041,796 | 1.05 | 49,447,811 | 0.98 |  |  | 48,574,925 |
| 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*

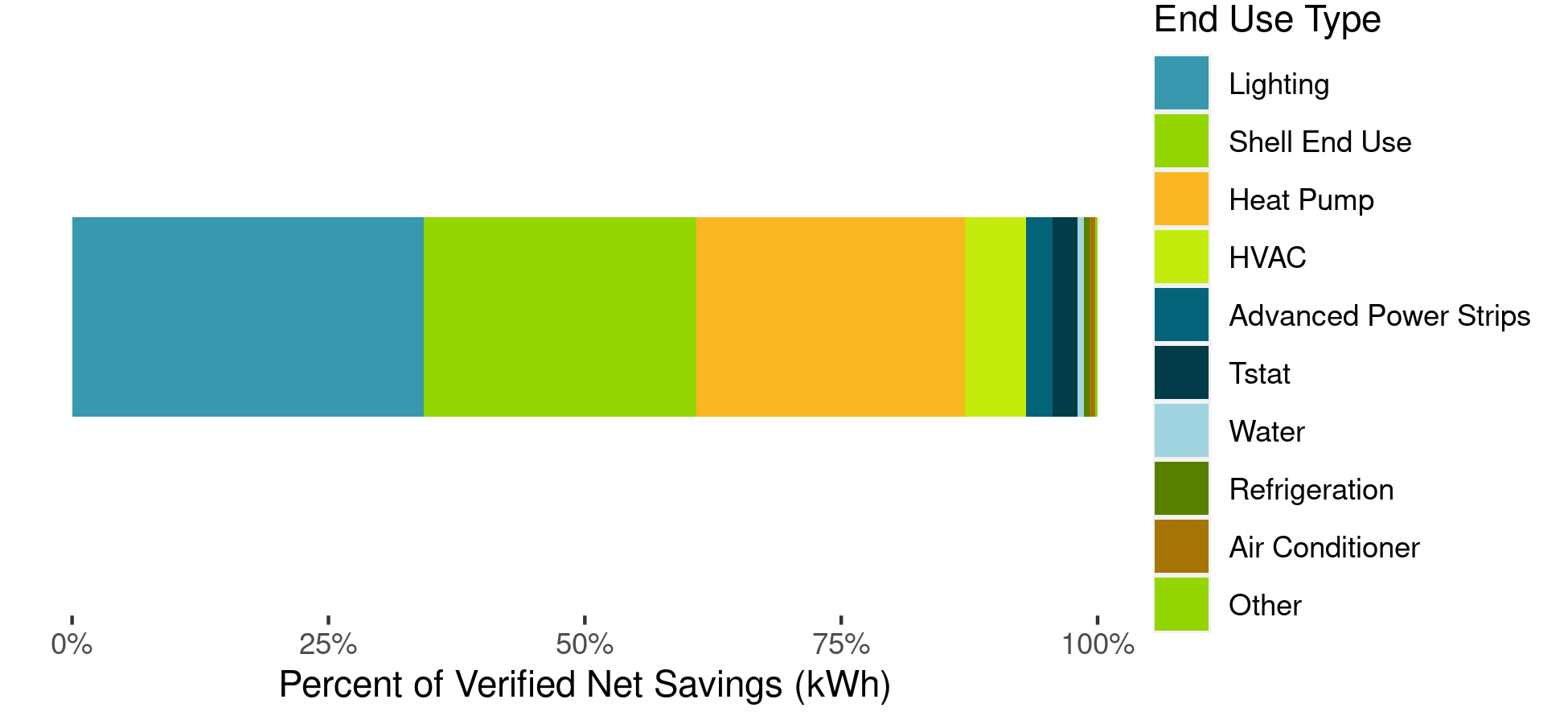
Table 15. Multifamily Upgrades Excluding Public Housing Total Annual Incremental Electric Savings - Non-Income Eligible

| 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 - Indirect from Fuel Switching (through 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 16 to Table 18 show the CPAS for the measures installed in CY2023. Table 16 shows the electric CPAS across all measures installed in 2022. Table 17 shows the gas contribution to CPAS (converted to equivalent electricity). Table 18 shows the combined savings.

Table 16. Multifamily Upgrades Excluding Public Housing CPAS – Electric

|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Contribution to CPAS | 34,006,327 | 442,350,027 |  |  |  |  |  | 33,657,254 | 33,604,371 | 32,971,464 | 32,944,886 | 32,929,800 | 29,971,667 |
| Historic Program Total Contribution to CPAS‡ |  |  | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 56,816,979 | 55,455,476 | 51,994,930 | 47,728,243 | 39,214,182 | 32,136,328 | 23,788,716 |
| Program Total CPAS | 34,006,327 | 442,350,027 | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 56,816,979 | 89,112,729 | 85,599,300 | 80,699,707 | 72,159,068 | 65,066,128 | 53,760,384 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 52,883 | 632,907 | 26,578 | 15,086 | 2,958,133 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | 1,361,503 | 3,460,546 | 4,266,686 | 8,514,062 | 7,077,853 | 8,347,612 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | 1,361,503 | 3,513,429 | 4,899,593 | 8,540,639 | 7,092,940 | 11,305,745 |

| 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 | 34,006,327 | 442,350,027 | 24,641,386 | 23,757,288 | 22,981,201 | 22,981,201 | 22,540,122 | 21,538,691 | 20,496,406 | 20,496,008 | 20,490,198 | 11,305,766 | 8,761,405 |
| Historic Program Total Contribution to CPAS‡ |  |  | 20,782,537 | 20,090,455 | 18,624,407 | 9,532,207 | 8,495,889 | 7,744,135 | 7,065,137 | 6,667,236 | 3,778,003 | 3,667,394 | 3,470,523 |
| Program Total CPAS | 34,006,327 | 442,350,027 | 45,423,924 | 43,847,743 | 41,605,608 | 32,513,407 | 31,036,011 | 29,282,827 | 27,561,543 | 27,163,244 | 24,268,201 | 14,973,160 | 12,231,928 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 5,330,281 | 884,098 | 776,088 | 0 | 441,079 | 1,001,430 | 1,042,285 | 398 | 5,810 | 9,184,431 | 2,544,361 |
| Historic Program Incremental Expiring Savings|| |  |  | 3,006,179 | 692,082 | 1,466,048 | 9,092,200 | 1,036,318 | 751,754 | 678,998 | 397,900 | 2,889,234 | 110,609 | 196,871 |
| Program Total Incremental Expiring Savings# |  |  | 8,336,460 | 1,576,180 | 2,242,136 | 9,092,200 | 1,477,396 | 1,753,184 | 1,721,284 | 398,299 | 2,895,043 | 9,295,040 | 2,741,232 |

| 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 | 34,006,327 | 442,350,027 | 8,760,305 | 8,760,305 | 8,760,305 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Historic Program Total Contribution to CPAS‡ |  |  | 3,455,105 | 3,454,933 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 34,006,327 | 442,350,027 | 12,215,409 | 12,215,237 | 8,760,305 | 0 | 0 | 0 | 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|| |  |  | 15,418 | 172 | 3,454,933 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 16,519 | 172 | 3,454,933 | 8,760,305 | 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.

# 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 17. Multifamily Upgrades Excluding Public Housing CPAS – Other Fuel (Gas + Propane)

|  | | | CPAS Verified Net Therms Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (Therms) | Lifetime Net Savings† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Other Fuel Contribution to CPAS (Therms) | 721,145 | 11,111,659 |  |  |  |  |  | 691,925 | 691,925 | 689,252 | 664,422 | 664,422 | 663,361 |
| CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡ | 21,136,773 |  |  |  |  |  |  | 20,280,333 | 20,280,333 | 20,201,977 | 19,474,222 | 19,474,222 | 19,443,109 |
| Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,136,773 | 0 | 0 | 0 | 0 | 0 | 0 | 20,280,333 | 20,280,333 | 20,201,977 | 19,474,222 | 19,474,222 | 19,443,109 |
| 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)# |  |  |  |  |  |  |  | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  |  |  |  |  |  | 0 | 0 | 78,355 | 727,755 | 0 | 31,113 |

| Savings Category | Verified Gross Savings (Therms) | Lifetime Net Savings† | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CY2023 Program Total Other Fuel Contribution to CPAS (Therms) | 721,145 | 11,111,659 | 607,201 | 607,201 | 607,201 | 607,201 | 597,346 | 543,500 | 543,500 | 543,500 | 543,500 | 350,945 | 334,397 |
| CY2023 Program Total Other Fuel Contribution to CPAS (kWh Equivalent)‡ | 21,136,773 |  | 17,797,057 | 17,797,057 | 17,797,057 | 17,797,057 | 17,508,208 | 15,929,979 | 15,929,979 | 15,929,979 | 15,929,979 | 10,286,200 | 9,801,182 |
| Historic Program Total Other Fuel Contribution to CPAS (kWh Equivalent)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,136,773 | 0 | 17,797,057 | 17,797,057 | 17,797,057 | 17,797,057 | 17,508,208 | 15,929,979 | 15,929,979 | 15,929,979 | 15,929,979 | 10,286,200 | 9,801,182 |
| CY2023 Program Incremental Expiring Other Fuel Savings (Therms) |  |  | 56,160 | 0 | 0 | 0 | 9,855 | 53,846 | 0 | 0 | 0 | 192,555 | 16,548 |
| CY2023 Program Incremental Expiring Other Fuel Savings (kWh Equivalent)|| |  |  | 1,646,053 | 0 | 0 | 0 | 288,849 | 1,578,229 | 0 | 0 | 0 | 5,643,778 | 485,018 |
| Historic Program Incremental Expiring Other Fuel Savings (kWh Equivalent)# |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  | 1,646,053 | 0 | 0 | 0 | 288,849 | 1,578,229 | 0 | 0 | 0 | 5,643,778 | 485,018 |

| 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) | 721,145 | 11,111,659 | 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)‡ | 21,136,773 |  | 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)§ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Program Total Other Fuel CPAS (kWh Equivalent) | 21,136,773 | 0 | 9,801,182 | 9,801,182 | 9,801,182 | 924,249 | 924,249 | 924,249 | 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)# |  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Other Fuel Savings (kWh Equivalent)\*† |  |  | 0 | 0 | 0 | 8,876,933 | 0 | 0 | 0 | 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 18. Multifamily Upgrades Excluding Public Housing CPAS – Total

|  | | | CPAS Verified Net kWh Savings | | | |  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Savings Category | Verified Gross Savings (kWh) | Lifetime Net Savings (kWh)† | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| CY2023 Program Total Contribution to CPAS | 55,143,101 | 768,032,748 |  |  |  |  |  | 53,937,586 | 53,884,703 | 53,173,441 | 52,419,109 | 52,404,022 | 49,414,777 |
| Historic Program Total Contribution to CPAS‡ |  |  | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 91,791,904 | 1,115,215,603 | 1,101,493,438 | 1,078,378,447 | 1,027,791,170 | 1,020,001,258 | 982,345,488 |
| Program Total CPAS | 55,143,101 | 768,032,748 | 11,768,297 | 17,484,846 | 26,770,117 | 31,603,548 | 91,791,904 | 1,169,153,190 | 1,155,378,141 | 1,131,551,888 | 1,080,210,279 | 1,072,405,281 | 1,031,760,265 |
| CY2023 Program Incremental Expiring Savings§ |  |  |  |  |  |  |  |  | 52,883 | 711,262 | 754,333 | 15,086 | 2,989,246 |
| Historic Program Incremental Expiring Savings|| |  |  |  |  |  |  |  | -1,023,423,700 | 13,722,166 | 23,114,991 | 50,587,277 | 7,789,912 | 37,655,770 |
| Program Total Incremental Expiring Savings# |  |  |  |  |  |  |  | -1,023,423,700 | 13,775,048 | 23,826,253 | 51,341,610 | 7,804,998 | 40,645,016 |

| 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 | 55,143,101 | 768,032,748 | 42,438,443 | 41,554,345 | 40,778,257 | 40,778,257 | 40,048,329 | 37,468,670 | 36,426,385 | 36,425,986 | 36,420,177 | 21,591,967 | 18,562,587 |
| Historic Program Total Contribution to CPAS‡ |  |  | 732,034,671 | 731,496,605 | 730,033,601 | 719,371,958 | 670,968,866 | 628,843,703 | 567,528,187 | 566,142,609 | 554,391,364 | 295,831,589 | 262,295,248 |
| Program Total CPAS | 55,143,101 | 768,032,748 | 774,473,114 | 773,050,950 | 770,811,858 | 760,150,215 | 711,017,195 | 666,312,373 | 603,954,572 | 602,568,595 | 590,811,541 | 317,423,556 | 280,857,835 |
| CY2023 Program Incremental Expiring Savings§ |  |  | 6,976,333 | 884,098 | 776,088 | 0 | 729,928 | 2,579,659 | 1,042,285 | 398 | 5,810 | 14,828,210 | 3,029,380 |
| Historic Program Incremental Expiring Savings|| |  |  | 250,310,817 | 538,066 | 1,463,004 | 10,661,643 | 48,403,092 | 42,125,162 | 61,315,516 | 1,385,578 | 11,751,245 | 258,559,775 | 33,536,342 |
| Program Total Incremental Expiring Savings# |  |  | 257,287,151 | 1,422,164 | 2,239,092 | 10,661,643 | 49,133,020 | 44,704,822 | 62,357,802 | 1,385,977 | 11,757,054 | 273,387,985 | 36,565,721 |

| 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 | 55,143,101 | 768,032,748 | 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‡ |  |  | 262,279,829 | 262,279,657 | 250,285,473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total CPAS | 55,143,101 | 768,032,748 | 280,841,316 | 280,841,144 | 268,846,960 | 924,249 | 924,249 | 924,249 | 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|| |  |  | 15,418 | 172 | 11,994,185 | 250,285,473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Program Total Incremental Expiring Savings# |  |  | 16,519 | 172 | 11,994,185 | 267,922,710 | 0 | 0 | 0 | 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

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.” [↑](#footnote-ref-2)