



ComEd Contractor / Midstream Rebates Program Impact Evaluation Report

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

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Introduction

This report presents the results of the impact evaluation of the Contractor / Midstream Rebates program for the program year from January 1 to December 31, 2022 (CY2022). The program was designed to offers incentives for the installation of qualifying high efficiency equipment and services including:

- Central Air Conditioning (CAC) Systems
- Air Source Heat Pumps (ASHPs)
- Ductless Mini-Split Heat Pumps (DMSHPs)
- Ground Source Heat Pumps (GSHPs)
- Furnace blower motors (electronically commutated motors, or ECMs)
- Smart Thermostats
- Duct Sealing
- CAC Tune Up

In CY2022, the program offered the CAC, ASHP, and DMSHP measures through a midstream channel. All other measures and services were incentivized through a downstream channel.

Program Savings Detail

Table 1 summarizes the incremental energy and demand savings the Contractor / Midstream Rebates Program achieved in CY2022. The gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim, either via joint or non-joint programs.¹

Table 1. Total Annual Incremental Electric Savings - Total

Savings Category	Units	Ex Ante Gross Savings*	Program Gross Realization Rate	Verified Gross Savings*	Program Net-to-Gross Ratio (NTG)	CY2020 Net Carryover Savings	CY2021 Net Carryover Savings	Verified Net Savings
Electric Energy Savings - Direct‡	kWh	4,585,595	0.98	4,491,603	0.80	N/A	N/A	3,599,994
Electric Energy Savings - Converted from Gas§	kWh	4,079,327	0.96	3,927,123	0.90	N/A	N/A	3,532,338
Electric Energy Savings - Indirect from Fuel Switching (through Electrification)	kWh	9,259,000	1.00	9,263,163	0.80	N/A	N/A	7,366,052
Total Electric Energy Savings#	kWh	17,923,923	0.99	17,681,890	0.82	N/A	N/A	14,498,383
Secondary Water Savings	kWh	0		0		N/A	N/A	0
Summer Peak*†† Demand Savings	kW	1,902	0.96	1,822	0.82	N/A	N/A	1,455

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

‡ 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.

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."

§ Gas savings converted to kWh by multiplying therms * 29.31 (which is based on 100,000 Btu/therm and 3,412 Btu/kWh). The evaluation team will determine which gas savings will be converted to kWh and counted toward ComEd’s electric savings goal while producing the portfolio-wide Summary Report.

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

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

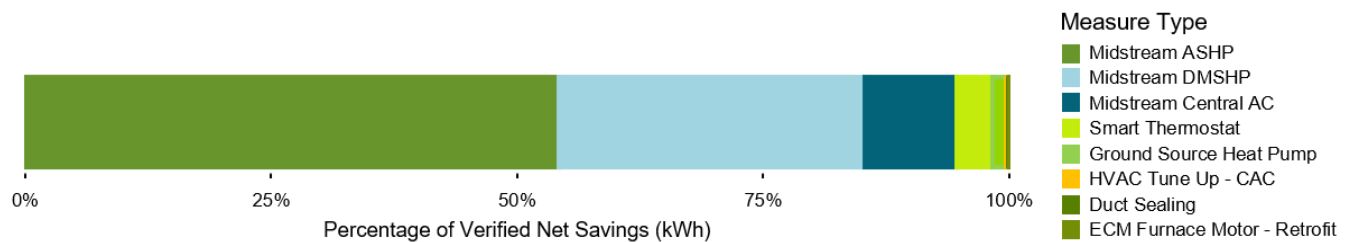
*† The Peak Demand Savings are savings occurring at coincident Summer Peak period, defined as 1:00 p.m. -5:00 p.m. Central Prevailing Time on non-holiday weekdays, June through August. This definition is in accordance with PJM requirement.

Note: The program-level NTG values are calculated as verified net/verified gross. The program-level value is a weighted average of measure-specific deemed NTG values, which are listed here: <https://www.ilsag.info/evaluator-ntg-recommendations-for-2022>.

Source: Evaluation team analysis

Figure 1 shows the electric energy savings by measure. It includes measure efficiency savings, carryover kWh, secondary water kWh, and electrification savings. It does not include gas savings converted to kWh.

Figure 1. Verified Net Savings by Measure



Source: Evaluation team analysis

Cumulative Persistent Annual Savings

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

Table 2. CPAS – Electric

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
CY2022 Program Total Contribution to CPAS	13,754,767	157,904,485					10,966,045	10,966,045	10,966,045	10,946,671	10,946,671	10,946,671	10,217,041
Historic Program Total Contribution to CPAS‡			9,255,057	18,819,448	22,705,543	27,544,170	27,544,170	27,441,264	26,769,770	26,427,663	25,104,575	24,680,414	23,538,696
Program Total CPAS	13,754,767	157,904,485	9,255,057	18,819,448	22,705,543	27,544,170	38,510,215	38,407,309	37,735,816	37,374,334	36,051,246	35,627,085	33,755,737
CY2022 Program Incremental Expiring Savings§								0	0	-19,375	0	0	-729,630
Historic Program Incremental Expiring Savings								0	-102,906	-671,493	-342,107	-1,323,088	-1,141,718
Program Total Incremental Expiring Savings#								0	-102,906	-671,493	-361,482	-1,323,088	-1,871,348

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2022 Program Total Contribution to CPAS	13,754,767	157,904,485	9,725,385	9,289,388	9,289,388	9,289,224	8,882,576	8,882,576	8,882,576	8,882,576	5,843,644	946,688	946,688
Historic Program Total Contribution to CPAS‡			23,487,472	22,120,875	21,316,332	20,680,963	20,680,963	14,823,897	14,177,549	10,344,046	7,885,052	1,739,277	500,373
Program Total CPAS	13,754,767	157,904,485	33,212,857	31,410,264	30,605,720	29,970,187	29,563,539	23,706,473	23,060,125	19,226,622	13,728,696	2,685,965	1,447,061
CY2022 Program Incremental Expiring Savings§			-491,656	-435,997	0	-164	-406,648	0	0	0	-3,038,932	-4,896,957	0
Historic Program Incremental Expiring Savings			-51,225	-1,366,596	-804,544	-635,369	0	-5,857,066	-646,348	-3,833,503	-2,458,994	-6,145,774	-1,238,904
Program Total Incremental Expiring Savings#			-542,880	-1,802,593	-804,544	-635,533	-406,648	-5,857,066	-646,348	-3,833,503	-5,497,926	-11,042,731	-1,238,904

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
CY2022 Program Total Contribution to CPAS	13,754,767	157,904,485	160,922	160,922	153,348	153,348	153,348	153,348	153,348	0	0	0	0
Historic Program Total Contribution to CPAS‡			495,317	479,213	479,213	432,888	299,792	140,067	0	0	0	0	0
Program Total CPAS	13,754,767	157,904,485	656,239	640,135	632,562	586,236	453,140	293,416	153,348	0	0	0	0
CY2022 Program Incremental Expiring Savings§			-785,766	0	-7,574	0	0	0	0	-153,348	0	0	0
Historic Program Incremental Expiring Savings			-5,056	-16,104	0	-46,325	-133,096	-159,724	-140,067	0	0	0	0
Program Total Incremental Expiring Savings#			-790,822	-16,104	-7,574	-46,325	-133,096	-159,724	-140,067	-153,348	0	0	0

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

‡ Historical savings go back to CY2018.

§ Incremental expiring savings are equal to CPAS Yn-1 - CPAS Yn.

|| Historic incremental expiring savings are equal to Historic CPAS Yn-1 – Historic CPAS Yn.

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

Source: Evaluation team analysis

Table 3. CPAS – Gas

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings											
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
CY2022 Program Total Gas Contribution to CPAS (Therms)	133,986	1,354,165					120,516	120,516	120,516	120,516	120,516	120,516	120,524	
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	3,927,123						3,532,338	3,532,338	3,532,338	3,532,338	3,532,338	3,532,338	3,532,554	
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			9,010,884	20,163,675	28,677,238	35,222,981	35,222,981	35,222,981	35,049,832	34,167,125	32,871,204	32,809,393	26,487,877	
Program Total Gas CPAS (kWh Equivalent)	3,927,123	0	9,010,884	20,163,675	28,677,238	35,222,981	38,755,320	38,755,320	38,582,170	37,699,464	36,403,542	36,341,731	30,020,430	
CY2022 Program Incremental Expiring Gas Savings (Therms)									0	0	0	0	7	
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)									0	0	0	0	216	
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#								0	0	-173,149	-882,707	-1,295,921	-61,811	-6,321,517
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†								0	0	-173,149	-882,707	-1,295,921	-61,811	-6,321,301

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings										
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2022 Program Total Gas Contribution to CPAS (Therms)	133,986	1,354,165	120,524	120,524	120,524	120,524	3,161	3,161	3,161	3,161	3,161	3,161	3,161
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	3,927,123		3,532,554	3,532,554	3,532,554	3,532,554	92,641	92,641	92,641	92,641	92,641	92,641	92,641
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			26,487,877	18,914,179	14,880,581	8,634,305	8,634,305	5,952,570	2,930,328	420,847	420,847	420,847	420,847
Program Total Gas CPAS (kWh Equivalent)	3,927,123	0	30,020,430	22,446,733	18,413,134	12,166,859	8,726,947	6,045,211	3,022,969	513,489	513,489	513,489	513,489
CY2022 Program Incremental Expiring Gas Savings (Therms)			0	0	0	0	-117,363	0	0	0	0	0	0
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			0	0	0	0	-3,439,913	0	0	0	0	0	0
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			0	-7,573,698	-4,033,598	-6,246,275	0	-2,681,736	-3,022,242	-2,509,480	0	0	0
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			0	-7,573,698	-4,033,598	-6,246,275	-3,439,913	-2,681,736	-3,022,242	-2,509,480	0	0	0

Savings Category	Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	CPAS Verified Net Therms Savings											
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
CY2022 Program Total Gas Contribution to CPAS (Therms)	133,986	1,354,165	3,161	3,161	0	0	0	0	0	0	0	0	0	
CY2022 Program Total Gas Contribution to CPAS (kWh Equivalent)‡	3,927,123		92,641	92,641	0	0	0	0	0	0	0	0	0	
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)§			358,945	57,118	57,118	2,865	39,943	0	0	0	0	0	0	
Program Total Gas CPAS (kWh Equivalent)	3,927,123	0	451,586	149,759	57,118	2,865	39,943	0	0	0	0	0	0	
CY2022 Program Incremental Expiring Gas Savings (Therms)			0	0	-3,161	0	0	0	0	0	0	0	0	
CY2022 Program Incremental Expiring Gas Savings (kWh Equivalent)			0	0	-92,641	0	0	0	0	0	0	0	0	
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)#			-61,903	-301,827	0	-54,252	37,077	-39,943	0	0	0	0	0	
Program Total Incremental Expiring Gas Savings (kWh Equivalent)*†			-61,903	-301,827	-92,641	-54,252	37,077	-39,943	0	0	0	0	0	

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

‡ kWh equivalent savings are calculated by multiplying therm savings by 29.31.

§ Historical savings go back to CY2018.

|| Incremental expiring savings are equal to CPAS Yn-1 - CPAS Yn.

Historic incremental expiring savings are equal to Historic CPAS Yn-1 – Historic CPAS Yn.

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

Source: Evaluation team analysis

Table 4. CPAS – Total

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
CY2022 Program Total Contribution to CPAS	17,681,890	197,595,056					14,498,383	14,498,383	14,498,383	14,479,009	14,479,009	14,479,009	13,749,595
Historic Program Total Contribution to CPAS‡			18,265,941	38,983,124	51,382,780	62,767,151	62,767,151	62,664,245	61,819,603	60,594,789	57,975,779	57,489,807	50,026,573
Program Total CPAS	17,681,890	197,595,056	18,265,941	38,983,124	51,382,780	62,767,151	77,265,535	77,162,629	76,317,986	75,073,798	72,454,788	71,968,816	63,776,167
CY2022 Program Incremental Expiring Savings§								0	0	-19,375	0	0	-729,414
Historic Program Incremental Expiring Savings								0	-102,906	-844,643	-1,224,814	-2,619,010	-485,972
Program Total Incremental Expiring Savings#								0	-102,906	-844,643	-1,244,188	-2,619,010	-485,972

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
CY2022 Program Total Contribution to CPAS	17,681,890	197,595,056	13,257,939	12,821,942	12,821,942	12,821,778	8,975,218	8,975,218	8,975,218	8,975,218	5,936,285	1,039,329	1,039,329
Historic Program Total Contribution to CPAS‡			49,975,348	41,035,054	36,196,912	29,315,268	29,315,268	20,776,466	17,107,876	10,764,893	8,305,899	2,160,125	921,221
Program Total CPAS	17,681,890	197,595,056	63,233,287	53,856,997	49,018,855	42,137,046	38,290,486	29,751,684	26,083,094	19,740,111	14,242,185	3,199,454	1,960,549
CY2022 Program Incremental Expiring Savings§			-491,656	-435,997	0	-164	-3,846,561	0	0	0	-3,038,932	-4,896,957	0
Historic Program Incremental Expiring Savings			-51,225	-8,940,294	-4,838,142	-6,881,644	0	-8,538,802	-3,668,590	-6,342,983	-2,458,994	-6,145,774	-1,238,904
Program Total Incremental Expiring Savings#			-542,880	-9,376,290	-4,838,142	-6,881,808	-3,846,561	-8,538,802	-3,668,590	-6,342,983	-5,497,926	-11,042,731	-1,238,904

Savings Category	Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	CPAS Verified Net kWh Savings										
			2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
CY2022 Program Total Contribution to CPAS	17,681,890	197,595,056	253,563	253,563	153,348	153,348	153,348	153,348	153,348	153,348	0	0	0
Historic Program Total Contribution to CPAS‡			854,262	536,331	536,331	435,753	339,734	140,067	0	0	0	0	0
Program Total CPAS	17,681,890	197,595,056	1,107,825	789,894	689,679	589,102	493,083	293,416	153,348	0	0	0	0
CY2022 Program Incremental Expiring Savings§			-785,766	0	-100,215	0	0	0	0	-153,348	0	0	0
Historic Program Incremental Expiring Savings			-66,959	-317,931	0	-100,578	-96,019	-199,667	-140,067	0	0	0	0
Program Total Incremental Expiring Savings#			-852,725	-317,931	-100,215	-100,578	-96,019	-199,667	-140,067	-153,348	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