



ComEd Summary Impact Evaluation Report

Energy Efficiency / Demand Response Plan:
Program Year 2019 (CY2019)
(1/1/2019-12/31/2019)

Presented to
ComEd

FINAL

June 25, 2020

Prepared by:

Charles Among
Guidehouse

Dustin Kunkel
Guidehouse

Isabeau Hitzman
Guidehouse





ComEd Summary Impact Evaluation Report

Submitted to:

ComEd
2011 Swift Drive
Oak Brook, IL 60523

Submitted by:

Guidehouse (which acquired Navigant in 2019)
150 N. Riverside Plaza, Suite 2100
Chicago, IL 60606

Contact:

Randy Gunn, Partner
312.583.5714
randy.gunn@guidehouse.com

Jeff Erickson, Director
608.616.4962
jeff.erickson@guidehouse.com

Disclaimer: This report was prepared by Guidehouse for ComEd. The work presented in this report represents Guidehouse's professional judgment based on the information available at the time this report was prepared. Use of this report by any other party for whatever purpose should not, and does not, absolve such party from using due diligence in verifying the report's contents. Neither Guidehouse nor any of its subsidiaries or affiliates assumes any liability or duty of care to such parties, and hereby disclaims any such liability.

TABLE OF CONTENTS

1. Introduction	1
2. Portfolio Savings	3
2.1 Annual Savings	3
2.2 Cumulative Persisting Annual Savings (CPAS)	5
2.2.1 Gas Savings	5
2.2.2 Legacy Savings	6
2.2.3 Historical Savings	6
2.2.4 Expiring Savings	6
2.2.5 Total Savings	7
2.2.6 Applicable Annual Incremental Goal (AAIG)	7
2.3 Weighted Average Measure Life	20
3. Savings by Program	22
4. Savings by Measure	28
5. Lifetime Savings and Total Resource Cost Savings Summary	32
6. High Impact Measures	35

LIST OF TABLES AND FIGURES

Figure 2-1. Annual Incremental Electric Savings by Sector	5
Figure 3-1. Net Energy Savings by Program – Electric Only	25
Figure 3-2. Net Peak Demand Savings by Program	26
Figure 4-1. Net Energy Savings by End-use Type – Electric Only	29
Figure 4-2. Net Peak Demand Savings by End-use Type	30
Table 1-1. ComEd CY2019 Energy Efficiency Programs	2
Table 2-1. Total Annual Savings	3
Table 2-2. Total Annual Incremental Electric Savings by Sector	4
Table 2-3. CPAS by Program – Electric	8
Table 2-4. CPAS by Program – Gas	11
Table 2-5. CPAS from Gas Counting Toward ComEd Goal	14
Table 2-6. Measure List and Savings from Gas Counting Toward ComEd Goal	16
Table 2-7. Total CPAS Counting Toward ComEd Goal	17
Table 2-8. WAML and Verified Gross Savings by Program	21
Table 3-1. Energy Savings by Program – Electric Only	22
Table 3-2. Demand Savings by Program	23
Table 3-3. Summer Peak Demand Savings by Program	24
Table 3-4. Comparing Electric Net Goals to Actual Achieved by CY2019 Program	27
Table 4-1. Energy Savings by Measure Category – Electric Only	28
Table 4-2. Summer Peak Demand Savings by Measure Category	29
Table 4-3. Energy Savings by Measure Category and Sector – Electric Only	31
Table 4-4. Secondary Energy Savings from Water Reduction by Measure – Electric Only	32
Table 5-1. Verified First Year and Lifetime Savings and Acquisition Costs – Electric Only	33
Table 5-2. Total Resource Cost Savings Summary	34
Table 6-1. Summary Table of CY2019 High Impact Measures – Residential	35
Table 6-2. Summary Table of CY2019 High Impact Measures – Business	36
Table 6-3. Summary Table of CY2019 High Impact Measures – Income Eligible	37

1. INTRODUCTION

This report presents the results of the impact evaluation of ComEd's Program Year 2019 (CY2019) slate of energy efficiency programs. It presents a summary of the energy and demand impacts for the portfolio and each program and some detail on measure-specific savings. CY2019 covers January 1, 2019 through December 31, 2019.

In CY2019, ComEd's portfolio included 42 programs, including 17 Business, 10 Residential, 11 Income Eligible, three Pilot, and one cross-cutting program, Voltage Optimization, as listed in Table 1-1.

This summary report contains savings from programs that ComEd can claim towards the CY2019 goals. Process evaluation findings and results of net-to-gross research are presented in separate reports.

Seven programs had carryover savings from measures sold or incented in program year 9 (PY9) and program year CY2018 that were installed in CY2019. The programs are Lighting Discounts, Lighting Discounts – IE, Business Instant Discounts, UIC-ERC Income Eligible Kits, Food Bank LED Distribution, Elementary Education Kits, and Small Business Kits.

This report includes 13 programs that ComEd implemented jointly or coordinated with Nicor Gas Company, Peoples Gas Light and Coke Company ("PGL") and North Shore Gas Company ("NSG").

Table 1-1. ComEd CY2019 Energy Efficiency Programs

Sector	Program
All	Voltage Optimization
Business	
Business	Agriculture
Business	Business Grocery
Business	Business Instant Discounts
Business	Business Telecomm
Business	Facility Assessments
Business	Incentives - Custom
Business	Incentives - Standard
Business	Industrial Systems
Business	LED Streetlighting
Business	Nonprofit Retrofits
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)
Business	Small Business - Private
Business	Small Business - Public
Business	Small Business Kits
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)
Business	Virtual Commissioning
Residential	
Residential	Appliance Rebates
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)
Residential	Fridge & Freezer Recycling
Residential	Lighting Discounts
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)
Residential	Residential Behavior
Residential	Residential HVAC
Residential	Residential New Construction (Joint w/Nicor Gas)
Residential	Single-Family Assessment (Joint w/Nicor Gas & PG/NSG)
Residential	Weatherization
Income Eligible	
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)
Income Eligible	Appliance Rebates - IE (Combined with Lighting Discounts - IE)
Income Eligible	Food Bank-LED Distribution
Income Eligible	Lighting Discounts - IE (Combined with Appliance Rebates - IE)
Income Eligible	Manufactured Housing Retrofit
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)
Income Eligible	UIC-ERC Income Eligible Kits
Pilots	
Pilot - Residential	Ductless Heat Pump and Building Envelope Pilot
Pilot - Income Eligible	IE Program Design Pilot
Pilot - Income Eligible	IE Senior Design Pilot

Note: table contains only programs where Guidehouse submitted impact reports to ComEd. Appliance Rebate Income Eligible and Lighting Discounts Income Eligible were presented together as one report. Multi-Family Retrofits IHWAP and Income Eligible were presented as one report, and Single-Family IHWAP and CBA were presented as one report.

Source: ComEd tracking data and Guidehouse evaluation reports.

2. PORTFOLIO SAVINGS

The evaluation calculated incremental annual savings and cumulative persisting annual savings (CPAS) from the ComEd CY2019 programs. Each is presented below.

2.1 Annual Savings

Table 2-1 summarizes the incremental energy and demand savings the ComEd portfolio achieved in CY2019, including both electric and gas savings (converted to kWh). 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 incremental goal as defined in paragraph (7) of subsection (g) of this Section be met through savings of fuels other than electricity." The terms and calculation approaches are defined in section 2.2.

Table 2-1. Total Annual Savings

Savings Category	Energy Savings (kWh)	Demand Savings (kW)*	Peak Demand Savings (kW)*
Ex Ante Gross Savings	1,828,540,528	96,218	186,719
Portfolio Gross Realization Rate	1.01	7.93	1.45
Verified Gross Savings	1,854,684,490	762,900	270,988
Portfolio Net-to-Gross Ratio (NTG)	0.86	0.81	0.83
Verified Net Savings	1,597,848,450	620,445	223,932
Legacy Savings†	4,087,238,480		
Gas Savings Eligible for Claiming (Net Therms)	7,278,424		
Gas Savings Counted Toward Goal (Net Therms)	3,486,215		
Gas Savings Counted Toward Goal (kWh)‡	102,180,962		
Total Net Savings (Electric + Gas Savings Counted)	1,700,029,412	620,445	223,932
Historic Portfolio Total Savings (Electric + Gas Savings Counted)§	1,726,757,624		
Grand Total Net Savings (Plus Legacy & Historic Savings)	7,514,025,516	620,445	223,932
CPAS Statutory Goal	7,152,667,340		
CPAS Achieved as Percent of Goal	105%		
Applicable Annual Incremental Goal (AAIG)	1,021,809,620		
Applicable Annual Incremental Savings Achieved‡§	1,095,401,522		
AAIG Achieved as Percent of Goal	107%		

Note: The totals in this table may vary slightly from the totals in other tables and the totals summed across the individual program reports due to rounding issues. Verified gross include carryover savings. This was different for the program level reports where programs excluded carryover savings from Table 3-1.

Some programs do not report ex ante gross savings (e.g., the Home Energy Reports program), so the evaluation did not calculate verified gross savings. The ex ante gross shown here is as reported by the programs and verified gross is only for those reporting ex ante gross. For the purposes of calculating a portfolio NTG ratio, Guidehouse used only those programs reporting ex ante gross and verified gross. Based on the same issue, the ratio of the net and verified gross savings shown in the table will not present an accurate ratio for the portfolio.

* Demand savings are equivalent to the reduction in kW in 2019. The Peak Demand are kW savings occurring at coincident Summer Peak period, defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August.

† Estimated by multiplying statutory 2019 CPAS Legacy Savings percent (5.2%) by ComEd Baseline - 2014-2016 Average Annual Sales Less Exempt Customers MWh value of 78,600,740.

‡ Gas savings converted to kWh by multiplying therms by 29.31 (which is based on 100,000 Btu/therm and 3,412 Btu/kWh).

§ Historical savings go back to CY2018

|| Estimated by multiplying statutory 2019 CPAS Goal percent (9.1%) by ComEd Baseline - 2014-2016 Average Annual Sales Less Exempt Customers MWh value of 78,600,740.

‡§ Estimated as new incremental savings from 2019 after offsetting incremental expiring savings in 2019.

Source: ComEd tracking data and Guidehouse team analysis.

Table 2-2 summarizes savings from the sectors. In CY2019, ComEd's energy efficiency portfolio achieved 1,597,848 verified net MWh savings, with the Business programs achieving 891,644 verified net MWh, the Residential programs achieving 344,617 verified net MWh, the Income Eligible programs achieving 177,394 net MWh, the Pilot programs achieving 152 verified net MWh, and 184,042 net MWh savings from Voltage Optimization. The portfolio savings included 1,545,645 net MWh from funded measures in CY2019 and 52,203 net MWh savings from previously funded lighting measures, or carryover, funded in PY9 and CY2018 through the Lighting Discounts, Lighting Discounts – IE, Business Instant Discounts, UIC-ERC Income Eligible Kits, Food Bank LED Distribution, Elementary Education Kits, and Small Business Kits Programs and expected to be installed in CY2019.¹

Table 2-2. Total Annual Incremental Electric Savings by Sector

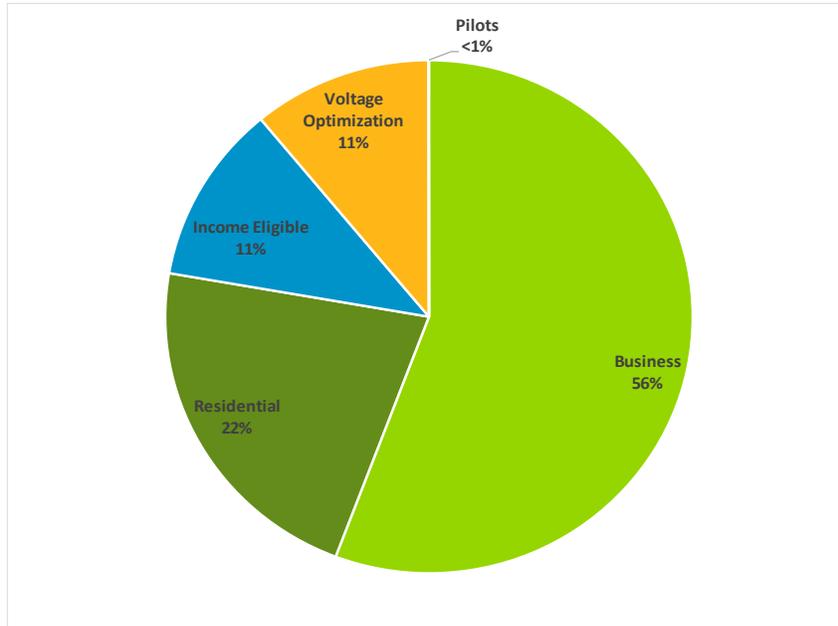
Savings Type	Sector	Ex Ante Gross Savings	Verified Gross Realization Rate	Verified Gross Savings	NTG*	Verified Net Savings
Energy (kWh)	Business	1,068,951,810	0.99	1,057,164,123	0.84	891,643,699
Energy (kWh)	Residential	401,750,183	1.09	435,932,664	0.66	344,617,048
Energy (kWh)	Income Eligible	161,244,577	1.10	177,394,136	1.00	177,394,136
Energy (kWh)	Pilots	293,457	0.52	152,064	1.00	152,064
Energy (kWh)	Voltage Optimization	196,300,500	0.94	184,041,503	1.00	184,041,503
Energy (kWh)	Total	1,828,540,528	1.01	1,854,684,490	0.86	1,597,848,450
Demand (kW)	Business	96,218	2.36	226,803	0.87	196,240
Demand (kW)	Residential	-	-	370,736	0.70	258,844
Demand (kW)	Income Eligible	-	-	165,187	1.00	165,187
Demand (kW)	Pilots	-	-	174	1.00	174
Demand (kW)	Voltage Optimization	-	-	-	-	-
Demand (kW)	Total	96,218	7.93	762,900	0.81	620,445
Peak Demand (kW)	Business	150,026	1.01	151,154	0.83	124,705
Peak Demand (kW)	Residential	22,984	2.82	64,841	0.68	44,235
Peak Demand (kW)	Income Eligible	13,670	1.68	22,972	1.00	22,972
Peak Demand (kW)	Pilots	38	0.98	38	1.00	38
Peak Demand (kW)	Voltage Optimization	-	-	31,983	1.00	31,983
Peak Demand (kW)	Total	186,718	1.45	270,988	0.83	223,932

Note: The totals in this table may vary slightly from the totals in other tables and the totals summed across the individual program reports due to rounding issues.

Source: ComEd tracking data and Guidehouse team analysis.

Overall, the Business programs realized 56% of the portfolio savings, the Residential programs contributed 22% of the total savings, followed by Income Eligible programs at 11%, Voltage Optimization at 11%, and Pilots with less than half percent (see Figure 2-1). Further detail on the savings by program is shown in subsequent sections.

¹ ComEd did not report ex ante carryover savings for any of the seven programs. All program reports with carryover show carryover in the verified gross and verified net savings in the CPAS tables and subsequent tables.

Figure 2-1. Annual Incremental Electric Savings by Sector


Source: ComEd tracking data and Guidehouse team analysis.

2.2 Cumulative Persisting Annual Savings (CPAS)

Per Section 8-103B of the Illinois Public Utilities Act, ComEd’s energy efficiency goals are expressed in CPAS, which is the sum of the electric energy savings achieved in a given year from all measures installed in that year and in previous years, but no earlier than January 1, 2012, that are still operational and providing savings in that year.

ComEd’s CPAS are formed of several parts: electricity savings, including reduction in water usage that produce secondary kWh savings from water supply and wastewater treatment, and other fuels’ savings (gas savings in therms converted to kWh in 2019) that ComEd can claim toward their goal.

2.2.1 Gas Savings

The gas savings attributed to ComEd’s programs are only those not claimed by the Illinois gas utilities so that there is no double-counting. Some of the gas savings are from programs jointly implemented with the gas utilities, and some are from ComEd-only programs that produce gas savings along with electric savings. 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 incremental goal as defined in paragraph (7) of subsection (g) of this Section be met through savings of fuels other than electricity." For CY2019, ComEd’s savings target is 1,021,810 MWh and so ComEd can claim up to 102,181 MWh in gas savings.²

The Future Energy Jobs Act (FEJA) specifies that ComEd shall prioritize other fuels for the Income Eligible population first to the extent practicable, but can use other fuels from other sectors to achieve their target. To calculate the other fuels’ savings (gas savings) eligible for claiming, the evaluation team

² FEJA Statute: 220 ILCS 5/8-103B(g)(7.5). Section 8-103B. The 2019 applicable annual incremental goal is estimated as the difference in the 2019 CPAS Statutory Goal (7,152,667 MWh) and the 2018 CPAS Statutory Goal (6,130,858 MWh).

used a data set containing all measure-level savings, with associated sector and program flags. We sorted the measures from the Income Eligible programs to the top, then sorted by descending measure life³. We calculated cumulative savings from the top of the data set until the cumulative total reached the maximum ComEd can claim. Only those savings above that point were included in Table 2-5 below.

2.2.2 Legacy Savings

FEJA specifies legacy savings, which are cumulative persisting annual savings from energy efficiency measures implemented by ComEd from January 1, 2012 to December 31, 2017 that are still providing savings in the applicable year. The evaluation applied the deemed legacy savings of 4,087,238 MWh toward ComEd verified CPAS in CY2019.⁴

2.2.3 Historical Savings

FEJA requires that historical savings be included in CPAS. This means that the CPAS tables shown in this report include savings from measures installed in 2018 that have not reached the end of their EUL. It also means that the CPAS tables account for expiring savings. The evaluation applied the historical contribution to CPAS of 1,726,758 MWh (electric 1,632,437 MWh plus counted gas converted of 94,321 MWh) toward ComEd verified total CPAS in CY2019.

2.2.4 Expiring Savings

FEJA specifies that each year ComEd's programs must replace energy savings for measures that have reached the end of their measure lives before any progress towards achievement of its applicable annual incremental goal may be counted. The evaluation calculated incremental expiring savings using the following equation.

Equation 1. Incremental Expiring Savings

$$\text{Incremental Expiring Savings} = \text{CPAS } Y_{n-1} - \text{CPAS } Y_n$$

The grand total incremental expiring savings in CY2019 is estimated as CY2019 incremental expiring savings plus the legacy incremental expiring savings in CY2019 and historical expiring savings from CY2018, given a value of 604,628 MWh (in CY2019, there were no incremental expiring savings, but from legacy incremental expiring savings of 471,604 MWh, and historical incremental expiring savings⁵ of 133,023 MWh).

³ For 2019, Guidehouse identified some measures where it was possible to confirm the gas companies were not also claiming gas savings (e.g., gas companies purchase therms from ComEd on advanced thermostats, they did not claim gas savings on clothes washers, ductless mini-split heat pumps, and EMS). There were other measures where it was not possible to state definitively that gas companies were not also counting the gas savings (e.g., Kitchen DCV, programmable thermostats, air sealing and pipe insulation). Those measures were sorted to the bottom of the data so they were not counted in the calculation of the savings ComEd can claim toward goal.

⁴ For CY2019, legacy savings is estimated by multiplying statutory 2019 CPAS Legacy Savings percent (5.2%) by ComEd Baseline - 2014-2016 Average Annual Sales Less Exempt Customers MWh value of 78,600,740. Legacy expiring savings is the difference between legacy savings persisting in current year and previous year (difference in the year's statutory 2019 CPAS Legacy Savings percent of 5.2% and 5.8% respectively) multiplied by ComEd Baseline - 2014-2016 Average Annual Sales Less Exempt Customers MWh value of 78,600,740.

⁵ Historic incremental expiring savings are equal to Historic CPAS $Y_{n-1} - \text{Historic CPAS } Y_n$.

2.2.5 Total Savings

As shown in Table 2-3 and the following tables, ComEd's CY2019 energy efficiency programs achieved total electric CPAS of 1,597,848 MWh. They achieved 7,278,424 therms of gas savings, which converts to 213,331 MWh.⁶ From those gas savings, ComEd can claim 102,181 MWh toward their annual incremental goal. Adding the current year electric savings to the allowable converted gas savings gives 1,700,029 MWh total savings.

Adding the legacy savings of 4,087,238 MWh and historical savings from CY2018, the grand total CY2019 CPAS that ComEd can claim is 7,514,026 MWh (which is 105% of the CPAS goal).

2.2.6 Applicable Annual Incremental Goal (AAIG)

Per FEJA,⁷ the AAIG is estimated as the difference between the statutory CPAS goal for the current year (CY2019) and the CPAS goal for the immediately preceding calendar year (2018). We calculate progress toward AAIG that ComEd achieved in CY2019 as the difference in verified CY2019 CPAS and the incremental expiring savings (both expiring legacy savings and post-2017 expiring programmatic savings).

Equation 2. Applicable Annual Incremental Goal (AAIG)

$$\text{AAIG} = \text{CPAS } Y_n \text{ Goal} - \text{CPAS } Y_{n-1} \text{ Goal}$$

Equation 3. Applicable Annual Incremental Goal Achieved

$$\text{Progress toward AAIG} = \text{CPAS } Y_n - \text{Incremental Expiring Savings } Y_n$$

In CY2019, the AAIG is estimated as 1,021,810 MWh. The estimated progress toward goal that ComEd achieved is 1,095,402 MWh, which is the difference between the CPAS that ComEd can claim against their goal (1,700,029 MWh) and the grand total incremental expiring savings (604,628 MWh). The AAIG achieved as percent of goal is 107%.

⁶ Gas savings converted to kWh by multiplying therms by 29.31 (which is based on 100,000 Btu/therm and 3,412 Btu/kWh).

⁷ FEJA Statute: 220 ILCS 5/8-103B(g)(7.5). Section 8-103B.



ComEd Summary Impact Evaluation Report

Table 2-3. CPAS by Program – Electric

Sector	Program	WAML*	CY2019 Verified Gross Savings (kWh)	Lifetime Net Savings (kWh)†	Verified Net kWh Savings									
					2018	2019	2020	2021	2022	2023	2024	2025	2026	
Business	Business Instant Discounts	9.9	306,616,482	0.81	2,349,286,754		249,177,524	234,734,968	229,181,737	228,943,389	222,218,258	212,505,709	204,354,981	130,794,989
Business	Incentives - Standard	12.4	253,132,456	0.82	2,523,306,236		207,401,858	207,401,858	207,189,277	206,951,332	204,682,148	201,142,819	199,885,344	199,605,003
Business	Small Business - Private	14.0	179,317,629	0.92	2,060,833,826		164,972,218	164,972,218	163,797,228	163,656,743	163,209,105	137,542,960	137,542,960	137,218,708
Business	LED Streetlighting	12.0	91,536,753	1.00	1,085,008,536		91,536,753	91,536,753	91,536,753	91,536,753	89,857,690	89,857,690	89,857,690	89,857,690
Business	Incentives - Custom	15.4	50,327,327	0.53	392,043,313		26,468,108	26,468,108	26,468,108	26,468,108	26,468,108	25,756,007	25,756,007	25,756,007
Business	Industrial Systems	7.2	40,404,017	0.77	204,197,559		31,111,093	30,027,195	29,903,276	12,263,437	12,263,437	11,885,323	11,885,323	10,306,669
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	8.4	33,349,771	0.94	264,270,255		31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	17.4	27,554,169	0.68	326,020,928		18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	5.0	23,296,606	1.00	116,483,031		23,296,606	23,296,606	23,296,606	23,296,606	23,296,606			
Business	Virtual Commissioning	8.6	14,422,775	1.00	138,458,643		14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775
Business	Small Business - Public	10.1	11,602,593	0.92	101,985,150		10,674,385	10,674,385	10,585,445	9,907,310	9,733,600	9,504,655	9,504,655	9,504,655
Business	Small Business Kits	12.6	6,942,747	0.92	40,331,185		6,377,081	6,377,081	5,361,226	5,361,226	5,361,226	1,660,805	1,660,805	1,573,959
Business	Business Grocery	14.9	6,044,385	0.92	77,386,496		5,560,834	5,560,834	5,543,895	5,543,895	5,512,091	4,998,479	4,998,479	4,998,479
Business	Business Telecomm	10.0	5,109,849	0.71	36,115,724		3,627,993	3,627,993	3,627,993	3,627,993	3,627,993	3,531,638	3,531,638	3,416,493
Business	Facility Assessments	4.6	3,578,494	0.94	15,351,676		3,363,784	3,363,784	3,363,784	2,630,162	2,630,162			
Business	Nonprofit Retrofits	9.0	3,430,859	0.92	28,483,445		3,156,390	3,156,390	3,156,390	3,156,390	3,156,390	3,009,343	3,009,343	3,009,343
Business	Agriculture	14.5	497,211	0.83	5,968,397		410,675	410,675	410,675	410,675	410,675	410,675	410,675	410,675
Residential	Lighting Discounts	10.4	283,967,289	0.61	894,620,160		173,374,006	173,374,006	113,007,998	112,855,112	109,161,414	38,101,548	36,498,142	36,498,142
Residential	Fridge & Freezer Recycling	6.5	40,959,489	0.50	131,815,805		20,378,327	20,378,327	20,378,327	20,378,327	20,133,119	20,133,119	10,036,260	
Residential	Appliance Rebates	11.1	38,951,334	0.89	380,811,814		34,542,134	34,542,134	34,542,134	34,542,134	34,542,134	34,542,134	34,542,134	33,113,774
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	9.2	32,385,490	0.85	154,186,907		27,420,368	27,420,368	20,901,529	20,901,529	20,901,529	9,629,933	8,655,059	6,045,122
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	8.4	15,285,371	0.92	96,644,176		14,131,467	14,125,994	12,178,755	12,109,400	12,109,168	8,428,186	6,758,076	6,052,969
Residential	Residential HVAC	15.5	13,666,419	0.70	141,986,555		9,564,392	9,564,392	9,564,392	9,564,392	9,564,392	9,222,285	9,222,285	9,222,285
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	9.6	9,715,863	0.95	65,606,467		9,211,683	9,211,683	5,897,888	5,897,888	5,897,888	5,897,888	5,897,888	5,897,888
Residential	Weatherization	20.0	605,461	1.00	11,756,935		607,730	607,730	607,730	607,730	607,730	607,730	607,730	607,730
Residential	Residential New Construction (Joint w/Nicor Gas)	18.0	395,948	0.65	4,632,592		257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366
Residential	Residential Behavior	5.0	-		136,820,857		55,129,576	39,693,295	24,113,676	12,458,733	5,425,277			
Income Eligible	Food Bank-LED Distribution	9.5	76,763,976	1.00	342,830,665		76,763,976	76,763,976	26,475,244	26,475,244	26,475,244	21,976,305	21,976,021	21,974,885
Income Eligible	Lighting Discounts - IE (Combined with Appliance Rebates - IE)	9.9	59,026,580	1.00	352,743,099		59,026,580	59,026,580	37,833,407	37,833,407	37,231,350	19,873,639	19,708,289	19,464,157
Income Eligible	UIC-ERC Income Eligible Kits	9.3	19,602,134	1.00	125,141,693		19,602,134	19,602,134	12,299,791	12,299,791	12,299,791	12,299,791	12,299,791	8,746,291
Income Eligible	Appliance Rebates - IE (Combined with Lighting Discounts - IE)	7.1	7,553,428	1.00	53,474,216		7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	258,659
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	9.3	3,781,962	1.00	27,837,171		3,781,962	3,771,557	3,287,574	3,092,237	3,092,141	2,295,003	1,349,052	1,314,501
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	8.0	3,023,818	1.00	20,103,572		3,023,818	3,022,492	2,349,465	2,318,748	2,312,070	1,956,317	1,042,024	987,810
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	14.8	2,292,235	1.00	33,433,046		2,292,235	2,292,235	2,223,684	2,223,684	2,223,684	2,223,684	2,223,684	2,223,684
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	16.2	2,217,921	1.00	30,182,989		2,217,921	2,217,921	1,984,339	1,984,339	1,984,339	1,707,779	1,701,360	1,641,232
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	15.1	2,148,166	1.00	20,842,705		2,148,166	2,148,166	1,504,975	1,504,975	1,499,814	1,402,214	938,656	937,850
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	15.0	653,216	1.00	6,888,251		653,216	653,216	618,540	618,540	529,578	472,412	349,476	349,476
Income Eligible	Manufactured Housing Retrofit	11.5	330,700	1.00	2,870,129		330,700	330,700	255,041	255,041	255,041	220,370	206,472	182,139
Pilots	IE Senior Design Pilot	11.1	71,251	1.00	687,932		71,251	71,251	57,401	57,401	57,401	57,401	57,401	57,401
Pilots	IE Program Design Pilot	13.4	68,220	1.00	708,050		68,220	68,220	53,957	53,957	53,957	40,345	39,055	37,845
Pilots	Ductless Heat Pump and Building Envelope Pilot	20.0	12,593	1.00	251,861		12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593
All	Voltage Optimization	15.0	184,041,503	1.00	2,760,622,546		184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503
CY2019 Portfolio Total Electric Contribution to CPAS		11.4	1,854,684,490	0.83	15,563,031,347		1,597,848,450	1,566,868,509	1,389,931,526	1,358,159,913	1,335,158,135	1,149,609,580	1,122,880,042	1,020,886,368
Historic Portfolio Total Electric Contribution to CPAS\$							1,765,460,187	1,632,436,736	1,549,164,168	1,273,379,117	1,207,892,844	1,132,103,622	1,106,156,693	1,002,364,435
Portfolio Total Electric CPAS							1,765,460,187	3,230,285,186	3,116,032,678	2,663,310,643	2,566,052,757	2,467,261,757	2,125,244,477	1,939,991,846
CY2019 Portfolio Incremental Expiring Electric Savings†\$									30,979,941	176,936,984	31,771,613	23,001,778	185,548,555	26,729,538
Historic Portfolio Incremental Expiring Electric Savings†\$									133,023,450	83,272,568	275,785,051	65,486,273	75,789,223	25,946,928
Portfolio Total Incremental Expiring Electric Savings 									133,023,450	114,252,509	452,722,034	97,257,886	98,791,000	211,495,484



ComEd Summary Impact Evaluation Report

Sector	Program	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Business	Business Instant Discounts	119,129,076	112,890,827	100,553,699	81,404,674	76,907,640	75,343,830	71,145,455	0				
Business	Incentives - Standard	187,934,655	178,702,271	170,996,283	112,652,235	70,715,364	53,028,943	51,316,503	8,338,751	8,338,751	8,338,751	8,338,751	8,338,751
Business	Small Business - Private	131,225,194	131,129,991	122,341,278	116,607,588	115,399,587	105,618,038	105,530,604	13,881	13,881	13,881	13,881	13,881
Business	LED Streetlighting	89,857,690	89,857,690	89,857,690	89,857,690								
Business	Incentives - Custom	25,756,007	25,756,007	25,756,007	25,756,007	25,756,007	13,588,772	13,408,548	3,840,134	3,688,899	3,396,810	3,146,310	3,146,310
Business	Industrial Systems	8,728,015	8,728,015	8,647,470	8,647,470	8,647,470	5,576,684	5,576,684					
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGLNSG)	13,479,977											
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	18,736,835	7,494,734		
Business	Strategic Energy Management (Joint w/Nicor Gas & PGLNSG)												
Business	Virtual Commissioning	14,422,775	8,653,665										
Business	Small Business - Public	8,874,729	7,031,416	3,834,159	2,110,922	14,944	14,944	14,944					
Business	Small Business Kils	1,573,959	976,908	883,838	790,768	790,768	790,768	790,768					
Business	Business Grocery	4,994,402	4,994,402	4,950,167	4,950,167	4,950,167	4,915,101	4,915,101					
Business	Business Telecomm	3,301,349	3,301,349	178,658	178,658	178,658	178,658	178,658					
Business	Facility Assessments												
Business	Nonprofit Retrofits	3,009,343	332,060	332,060									
Business	Agriculture	401,207	401,207	401,207	369,845	369,845	369,845	369,845					
Residential	Lighting Discounts	29,582,476	28,626,625	8,827,085	8,827,085	8,827,085	8,827,085	8,232,351					
Residential	Fridge & Freezer Recycling												
Residential	Appliance Rebates	33,113,774	28,434,930	28,430,461	6,367,007	2,953,564	2,953,564	1,208,634	1,208,634	1,032,898	41,873	41,873	38,631
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	5,817,397	5,817,397	643,155	8,381	8,381	8,381	8,381					
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGLNSG)	4,163,369	3,281,012	1,988,226	1,142,305	60,898	60,898	53,540					
Residential	Residential HVAC	9,215,251	9,215,251	9,215,251	7,916,811	7,916,811	7,916,811	7,916,811	2,059,744	1,925,610	1,925,610	133,096	133,096
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	5,897,888	5,897,888										
Residential	Weatherization	607,730	607,730	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963
Residential	Residential New Construction (Joint w/Nicor Gas)	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366		
Residential	Residential Behavior												
Income Eligible	Food Bank-LED Distribution	21,974,885	21,974,885										
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	19,464,157	19,464,157	4,843,371	4,843,371	4,843,371	4,843,371	4,443,890					
Income Eligible	UIC-ERC Income Eligible Kits	7,846,091	7,846,091										
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	258,659	27,634	27,634	27,634								
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)	1,128,749	1,065,347	953,242	762,722	459,617	459,617	459,617	129,875	129,875	102,463	101,009	101,009
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	978,271	845,113	707,772	411,347	29,392	29,392	27,510	19,875	19,875	7,426	7,426	7,426
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,218,917	1,514,565	1,292,712	1,256,814	1,256,814	1,217,087	1,212,673	932,020	932,020	932,020	677,068	343,961
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)	1,638,595	1,638,595	1,215,413	1,152,580	1,152,580	1,141,518	1,141,518	1,141,518	1,141,518	1,141,518	1,141,518	1,096,890
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	928,822	928,822	773,960	719,351	718,694	717,021	717,021	708,946	706,954	696,924	610,570	525,665
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	349,476	349,476	314,976	287,698	182,235	182,235	182,235	182,235	182,235	172,239	142,623	116,008
Income Eligible	Manufactured Housing Retrofit	170,895	170,895	76,316	67,073	67,073	67,073	67,073	30,416	30,416	29,131	29,131	29,131
Pilots	IE Senior Design Pilot	57,401	49,706	32,592	6,814	6,814	6,814	6,814	6,814	6,814	6,814	6,814	6,814
Pilots	IE Program Design Pilot	37,730	37,730	24,767	21,449	21,449	21,449	21,449	21,449	21,449	21,449	21,449	20,673
Pilots	Ductless Heat Pump and Building Envelope Pilot	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593
All	Voltage Optimization	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503					
CY2019 Portfolio Total Electric Contribution to CPAS		913,597,207	913,597,954	791,715,712	680,760,728	535,851,489	491,494,161	482,562,798	38,209,049	37,745,952	25,159,565	14,992,076	14,498,804
Historic Portfolio Total Electric Contribution to CPAS\$		880,917,003	599,492,032	553,224,082	344,310,486	293,237,863	280,573,145	52,178,773	46,372,485	33,028,591	21,105,826	20,748,836	1,346,842
Portfolio Total Electric CPAS		1,842,104,211	1,513,089,986	1,344,939,794	1,025,071,214	829,089,351	772,067,306	534,741,571	84,581,534	70,774,542	46,265,392	35,740,912	15,845,646
CY2019 Portfolio Incremental Expiring Electric Savings†\$		59,699,160	47,589,254	121,882,241	110,954,985	144,909,239	44,357,328	8,931,363	444,353,749	463,097	12,586,386	10,167,490	493,272
Historic Portfolio Incremental Expiring Electric Savings†\$		38,188,475	281,424,971	46,267,950	208,913,596	51,072,623	12,664,718	228,394,372	5,806,289	13,343,894	11,922,764	356,990	19,401,994
Portfolio Total Incremental Expiring Electric Savings‡		97,887,635	329,014,225	168,150,191	319,868,581	195,981,862	57,022,046	237,325,735	450,160,037	13,806,991	24,509,151	10,524,480	19,895,266



ComEd Summary Impact Evaluation Report

Sector	Program	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Business	Business Instant Discounts												
Business	Incentives - Standard	7,296,096	7,296,096	7,296,096	59,150	59,150							
Business	Small Business - Private												
Business	LED Streetlighting												
Business	Incentives - Custbm	3,146,310	3,146,310	3,146,310									
Business	Industrial Systems												
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)												
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)												
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)												
Business	Virtual Commissioning												
Business	Small Business - Public												
Business	Small Business Kits												
Business	Business Grocery												
Business	Business Telecomm												
Business	Facility Assessments												
Business	Nonprofit Retrofits												
Business	Agriculture												
Residential	Lighting Discounts												
Residential	Fridge & Freezer Recycling												
Residential	Appliance Rebates	38,631	38,631										
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)												
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)												
Residential	Residential HVAC	133,096	133,096	133,096	133,096	133,096							
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)												
Residential	Weatherization												
Residential	Residential New Construction (Joint w/Nicor Gas)												
Residential	Residential Behavior												
Income Eligible	Food Bank-LED Distribution												
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]												
Income Eligible	UIC-ERC Income Eligible Kits												
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]												
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	343,961	343,961	343,961	343,961	343,961							
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	2,569	2,569										
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	62	62										
Income Eligible	Manufactured Housing Retrofit												
Pilots	IE Senior Design Pilot												
Pilots	IE Program Design Pilot												
Pilots	Ductless Heat Pump and Building Envelope Pilot												
All	Voltage Optimization												
CY2019 Portfolio Total Electric Contribution to CPAS		10,960,726	10,960,726	10,919,463	536,207	536,207	-	-	-	-	-	-	-
Historic Portfolio Total Electric Contribution to CPAS§		1,346,842	1,346,842	1,057,588	1,057,588	15	-	-	-	-	-	-	-
Portfolio Total Electric CPAS		12,307,568	12,307,568	11,977,051	1,593,795	536,222	-	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Electric Savings†§		3,538,077	-	41,263	10,383,256	-	536,207	-	-	-	-	-	-
Historic Portfolio Incremental Expiring Electric Savings†§		-	-	289,254	-	1,057,573	15	-	-	-	-	-	-
Portfolio Total Incremental Expiring Electric Savings 		3,538,077	-	330,518	10,383,256	1,057,573	536,222	-	-	-	-	-	-

Note: The green highlighted cell shows program total first year electric savings. The gray cells are blank, indicating values irrelevant to the CY2019 contribution to CPAS.

* WAML is the weighted average measure life across all measures and savings in the program.

† A deemed value. Source is to be found on the IL SAG web site here: https://www.ilsag.info/ntg_2019.

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

§ Historical savings go back to CY2018.

†§ Incremental expiring savings are equal to CPAS Y_{n-1} - CPAS Y_n .

‡§ Historic incremental expiring savings are equal to Historic CPAS Y_{n-1} - Historic CPAS Y_n .

|| Portfolio total incremental expiring savings is equal to current year total incremental expiring savings plus historic total incremental expiring savings.

Source: Evaluation team analysis



ComEd Summary Impact Evaluation Report

Table 2-4. CPAS by Program – Gas

Sector	Program	WAML	CY2019 Verified Gross Savings (Therms)		Lifetime Net Savings (Therms)†	Verified Net Therms Savings									
			NTG*			2018	2019	2020	2021	2022	2023	2024	2025	2026	
Business	Incentives - Standard	14.8	736,290	0.78	8,476,954		574,306	574,306	574,306	574,306	574,306	574,306	574,306	574,306	
Business	Small Business - Private	10.1	426,957	0.92	3,980,329		392,800	392,800	392,288	392,288	392,288	389,757	389,757	389,757	
Business	Small Business Kits	7.3	144,655	0.92	968,933		133,083	133,083	133,083	133,083	133,083	75,879	75,879	75,879	
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	17.4	76,187	0.68	901,450		51,807	51,807	51,807	51,807	51,807	51,807	51,807	51,807	
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	8.2	39,187	0.94	302,050		36,835	36,835	36,835	36,835	36,835	36,835	36,835	36,835	
Business	Facility Assessments	5.0	34,708	0.94	162,771		32,626	32,626	32,626	32,447	32,447				
Business	Small Business - Public	9.0	8,430	0.92	69,943		7,756	7,756	7,729	7,729	7,729	5,383	5,383	5,383	
Business	Business Telecomm	7.5	415	0.71	2,212		295	295	295	295	295	295	295	147	
Business	Agriculture		-		-										
Business	Business Grocery		-		-										
Business	Business Instant Discounts		-		-										
Business	Incentives - Custom		-		-										
Business	Industrial Systems		-		-										
Business	LED Streetlighting		-		-										
Business	Nonprofit Retrofits		-		-										
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)		-		-										
Business	Virtual Commissioning		-		-										
Residential	Appliance Rebates	11.1	3,984,383	0.99	43,592,113		3,945,712	3,945,712	3,945,712	3,945,712	3,945,712	3,945,712	3,945,712	3,945,712	
Residential	Residential HVAC	12.7	438,383	0.87	4,376,749		380,511	380,511	380,511	380,511	380,511	380,511	350,395	350,395	
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	9.4	219,477	1.00	2,068,037		219,477	219,477	203,635	203,635	203,635	203,635	203,635	203,635	
Residential	Single-Family Assessment (Joint w/Nicor Gas & PG/NSG)	11.0	584	1.00	6,420		584	584	584	584	584	584	584	584	
Residential	Fridge & Freezer Recycling		-		-										
Residential	Lighting Discounts		-		-										
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)		-		-										
Residential	Residential Behavior		-		-										
Residential	Residential New Construction (Joint w/Nicor Gas)		-		-										
Residential	Weatherization		-		-										
Income Eligible	UIC-ERC Income Eligible Kits	10.0	510,982	1.00	5,109,823		510,982	510,982	510,982	510,982	510,982	510,982	510,982	510,982	
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	13.2	473,150	1.00	6,199,407		473,150	473,150	473,150	472,134	472,124	469,098	281,824	281,824	
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	19.4	235,539	1.00	4,342,586		235,539	235,539	235,414	235,414	235,414	235,414	235,414	235,414	
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	21.6	193,216	1.00	3,708,305		193,216	193,216	193,216	193,216	191,885	191,885	160,343	160,343	
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	18.7	23,242	1.00	377,025		23,242	23,242	23,242	23,242	22,839	22,839	20,058	20,058	
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	12.6	22,943	1.00	289,824		22,943	22,943	22,943	22,943	22,943	22,943	22,943	22,943	
Income Eligible	Manufactured Housing Retrofit	15.3	19,537	1.00	290,641		19,537	19,537	19,488	19,488	19,488	19,488	19,488	19,488	
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]		-		-										
Income Eligible	Food Bank-LED Distribution		-		-										
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]		-		-										
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)		-		-										
Pilots	IE Senior Design Pilot	14.1	12,418	1.00	174,962		12,418	12,418	12,418	12,418	12,418	12,418	12,418	12,418	
Pilots	IE Program Design Pilot	18.0	11,603	1.00	205,162		11,603	11,603	11,603	11,603	11,603	11,603	11,603	11,603	
Pilots	Ductless Heat Pump and Building Envelope Pilot		-		-										
All	Voltage Optimization		-		-										
CY2019 Portfolio Total Gas Contribution to CPAS (Therms)			7,612,287	0.96	85,605,695		7,278,424	7,278,424	7,261,870	7,260,674	7,258,930	7,161,377	6,909,665	6,909,517	
CY2019 Portfolio Total Gas Contribution to CPAS (kWh Equivalent)‡			223,116,145	0.96	2,509,102,933		213,330,599	213,330,599	212,845,404	212,810,364	212,759,233	209,899,946	202,522,270	202,517,947	
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent)§							216,877,650	174,037,589	173,667,211	172,898,176	170,941,029	164,680,325	160,104,654	158,631,353	
Portfolio Total Gas CPAS (kWh Equivalent)							216,877,650	387,368,187	386,997,809	385,743,580	383,751,393	377,439,558	371,458,114	362,626,924	361,149,300
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)															
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent) 															
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡§							42,840,061	370,378	769,035	1,957,147	6,260,704	3,122,156	1,453,515	1,473,300	
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)‡§							42,840,061	370,378	1,254,229	1,992,187	6,311,835	5,981,444	8,831,190	1,477,623	



ComEd Summary Impact Evaluation Report

Sector	Program	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Business	Incentives - Standard	574,306	574,306	546,779	546,779	546,779	546,779	546,779					
Business	Small Business - Private	382,530	382,530	83,530									
Business	Small Business Kits	75,879											
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	51,807	51,807	51,807	51,807	51,807	51,807	51,807	51,807	51,807	20,723		
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	7,367											
Business	Facility Assessments												
Business	Small Business - Public	5,383	5,383	4,328									
Business	Business Telecomm												
Business	Agriculture												
Business	Business Grocery												
Business	Business Instant Discounts												
Business	Incentives - Custom												
Business	Industrial Systems												
Business	LED Streetlighting												
Business	Nonprofit Retrofits												
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)												
Business	Virtual Commissioning												
Residential	Appliance Rebates	3,945,712	3,945,712	3,945,712	63,095	63,095	63,095						
Residential	Residential HVAC	348,206	348,206	348,206	90,231	90,231	90,231	90,231	(1,265)	(1,265)	(1,265)	(1,265)	(1,265)
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	203,635	203,635										
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	584	584	584									
Residential	Fridge & Freezer Recycling												
Residential	Lighting Discounts												
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)												
Residential	Residential Behavior												
Residential	Residential New Construction (Joint w/Nicor Gas)												
Residential	Weatherization												
Income Eligible	UIC-ERC Income Eligible Kits	510,982	510,982										
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	278,807	278,807	264,347	263,190	263,190	262,061	262,061	186,098	186,098	186,098	186,098	186,098
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	233,511	233,511	205,938	194,682	194,682	199,819	199,819	199,413	199,413	199,413	199,413	199,413
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	160,343	160,343	157,773	150,413	150,413	136,914	136,914	135,894	133,672	133,672	133,672	133,672
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	19,666	19,666	17,470	15,217	15,217	15,378	15,378	15,315	15,315	15,315	15,315	15,315
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	22,943	22,653	20,047	20,047	20,047	542						
Income Eligible	Manufactured Housing Retrofit	15,403	15,403	11,810	10,273	10,273	10,273	10,273	10,186	10,186	10,186	10,186	10,186
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]												
Income Eligible	Food Bank-LED Distribution												
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]												
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)												
Pilots	IE Senior Design Pilot	12,418	12,418	12,418	4,262	4,262	4,262	4,262	4,262	4,262	4,262	4,262	4,262
Pilots	IE Program Design Pilot	11,478	11,478	10,319	8,816	8,816	8,816	8,816	8,760	8,760	8,760	8,760	8,760
Pilots	Ductless Heat Pump and Building Envelope Pilot												
All	Voltage Optimization												
CY2019 Portfolio Total Gas Contribution to CPAS (Therms)		6,860,962	6,777,426	5,681,068	1,418,812	1,418,812	1,389,978	1,326,340	610,469	608,247	577,162	556,439	556,439
CY2019 Portfolio Total Gas Contribution to CPAS (kWh Equivalent)†		201,094,796	198,646,354	166,512,097	41,585,387	41,585,387	40,740,242	38,875,035	17,892,858	17,827,717	16,916,631	16,309,240	16,309,240
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent)‡		156,339,698	77,251,997	77,251,997	77,251,997	77,160,367	74,980,000	13,827,677	13,827,677	13,238,619	10,336,434	10,336,434	6,330,146
Portfolio Total Gas CPAS (kWh Equivalent)		357,434,494	275,898,351	243,764,095	118,837,384	118,745,754	115,720,242	52,702,712	31,720,535	31,066,336	27,253,065	26,645,674	22,639,386
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)		48,555	83,536	1,096,358	4,262,256	-	28,835	63,637	715,871	2,222	31,084	20,723	-
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent) 		1,423,151	2,448,443	32,134,256	124,926,710	-	845,145	1,865,207	20,982,177	65,141	911,086	607,391	-
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)†‡		2,291,655	79,087,701	-	-	91,631	2,180,367	61,152,323	-	589,058	2,902,185	-	4,006,288
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)†‡§		3,714,806	81,536,143	32,134,256	124,926,710	91,631	3,025,512	63,017,530	20,982,177	654,199	3,813,271	607,391	4,006,288



ComEd Summary Impact Evaluation Report

Sector	Program	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Business	Incentives - Standard												
Business	Small Business - Private												
Business	Small Business Kits												
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)												
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGLNSG)												
Business	Facility Assessments												
Business	Small Business - Public												
Business	Business Telecomm												
Business	Agriculture												
Business	Business Grocery												
Business	Business Instant Discounts												
Business	Incentives - Custom												
Business	Industrial Systems												
Business	LED Streetlighting												
Business	Nonprofit Retrofits												
Business	Strategic Energy Management (Joint w/Nicor Gas & PGLNSG)												
Business	Virtual Commissioning												
Residential	Appliance Rebates												
Residential	Residential HVAC	(1,265)	(1,265)	(1,265)	(1,265)	(1,265)							
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)												
Residential	Single-Family Assessment (Joint w/Nicor Gas & PG/NSG)												
Residential	Fridge & Freezer Recycling												
Residential	Lighting Discounts												
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGLNSG)												
Residential	Residential Behavior												
Residential	Residential New Construction (Joint w/Nicor Gas)												
Residential	Weatherization												
Income Eligible	UIC-ERC Income Eligible Kits												
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)												
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)												
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	101,458	101,458	101,458	101,458	101,458							
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	739	739	739	739	739							
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)												
Income Eligible	Manufactured Housing Retrofit												
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]												
Income Eligible	Food Bank-LED Distribution												
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]												
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)												
Pilots	IE Senior Design Pilot												
Pilots	IE Program Design Pilot												
Pilots	Ductless Heat Pump and Building Envelope Pilot												
All	Voltage Optimization												
CY2019 Portfolio Total Gas Contribution to CPAS (Therms)		100,932	100,932	100,932	100,932	100,932	-	-	-	-	-	-	-
CY2019 Portfolio Total Gas Contribution to CPAS (kWh Equivalent)†		2,958,318	2,958,318	2,958,318	2,958,318	2,958,318	-	-	-	-	-	-	-
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent)§		6,330,146	6,330,146	6,330,146	6,330,146	6,330,146	-	-	-	-	-	-	-
Portfolio Total Gas CPAS (kWh Equivalent)†		9,288,464	9,288,464	9,288,464	9,288,464	9,288,464	2,958,318	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)		455,507	-	-	-	-	100,932	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent) 		13,350,923	-	-	-	-	2,958,318	-	-	-	-	-	-
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)†§		-	-	-	-	-	6,330,146	-	-	-	-	-	-
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)†§		13,350,923	-	-	-	-	6,330,146	2,958,318	-	-	-	-	-

Note: The green highlighted cell shows program total first year gas savings in kWh equivalents. The gray cells are blank, indicating no values or do not contribute to calculating CPAS in CY2019. Residential HVAC shows some negative CPAS due to fuel switching with higher efficiency baseline after certain years (ground source heat pumps with baseline shift from the AFUEbaseER to the AFUEbaseER, which in some cases can be more efficient than the newly installed equipment).

* A deemed value. Source: is to be found on the IL SAG web site here: https://www.ilsag.info/ntg_2019.

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

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

§ Historic 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.

‡§ kWh equivalent portfolio total incremental savings are calculated by multiplying therm savings by 29.31.

Source: Evaluation team analysis



ComEd Summary Impact Evaluation Report

Table 2-5. CPAS from Gas Counting Toward ComEd Goal

Sector	CY2019 Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)*	Verified Net Therms Savings									
			2018	2019	2020	2021	2022	2023	2024	2025	2026	
Income Eligible Gas (Therms)	1,478,610	20,317,611		1,478,610	1,478,610	1,478,436	1,477,420	1,475,675	1,472,649	1,251,053	1,251,053	
All Other Gas (Therms)	2,282,747	25,099,826		2,007,605	2,007,605	2,007,605	2,007,605	2,007,605	2,007,605	1,977,489	1,977,489	
Income Eligible Gas (kWh Equivalent)†	43,338,050	595,509,189		43,338,050	43,338,050	43,332,963	43,303,168	43,252,037	43,163,345	36,668,376	36,668,376	
All Other Gas (kWh Equivalent)‡	66,907,323	735,675,910		58,842,912	58,842,912	58,842,912	58,842,912	58,842,912	58,842,912	57,960,205	57,960,205	
CY2019 Portfolio Total Gas CPAS (Therms)	3,761,357	45,417,438		3,486,215	3,486,215	3,486,041	3,485,025	3,483,280	3,480,254	3,228,543	3,228,543	
CY2019 Portfolio Total Gas CPAS (kWh Equivalent)§	110,245,373	1,331,185,099		102,180,962	102,180,962	102,175,875	102,146,080	102,094,949	102,006,257	94,628,581	94,628,581	
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent Counted)			94,320,888	94,320,888	94,309,930	94,169,845	94,126,846	93,838,823	90,716,667	90,716,667	90,696,881	
Portfolio Total Gas CPAS (kWh Equivalent)†§			94,320,888	196,501,850	196,490,892	196,345,720	196,272,927	195,933,773	192,722,923	185,345,248	185,325,462	
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)					-	174	1,017	1,744	3,026	251,712	-	
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡§					-	5,087	29,795	51,131	88,693	7,377,675	-	
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡					-	10,958	140,085	42,999	288,023	3,122,156	-	19,785
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)					-	10,958	145,172	72,793	339,154	3,210,849	7,377,675	19,785

Sector	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Income Eligible Gas (Therms)	1,241,655	1,241,366	677,385	653,823	653,823	624,988	624,446	546,905	544,682	544,682	544,682	544,682
All Other Gas (Therms)	1,975,300	1,975,300	1,974,957	764,989	764,989	764,989	701,894	63,565	63,565	32,480	11,757	11,757
Income Eligible Gas (kWh Equivalent)†	36,392,912	36,384,425	19,854,143	19,163,553	19,163,553	18,318,408	18,302,510	16,029,782	15,964,641	15,964,641	15,964,641	15,964,641
All Other Gas (kWh Equivalent)‡	57,896,036	57,896,036	57,885,976	22,421,834	22,421,834	22,421,834	20,572,525	1,863,076	1,863,076	951,990	344,599	344,599
CY2019 Portfolio Total Gas CPAS (Therms)	3,216,955	3,216,665	2,652,341	1,418,812	1,418,812	1,389,978	1,326,340	610,469	608,247	577,162	556,439	556,439
CY2019 Portfolio Total Gas CPAS (kWh Equivalent)§	94,288,948	94,280,461	77,740,118	41,585,387	41,585,387	40,740,242	38,875,035	17,892,858	17,827,717	16,916,631	16,309,240	16,309,240
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent Counted)	90,402,272	76,772,195	76,772,195	76,772,195	76,680,564	74,500,197	13,827,677	13,827,677	13,238,619	10,336,434	10,336,434	6,330,146
Portfolio Total Gas CPAS (kWh Equivalent)†§	184,691,220	171,052,656	154,512,313	118,357,582	118,265,951	115,240,439	52,702,712	31,720,535	31,066,336	27,253,065	26,645,674	22,639,386
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)	11,588	290	564,324	1,233,529	-	28,835	63,637	715,871	2,222	31,084	20,723	-
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡§	339,633	8,487	16,540,343	36,154,731	-	845,145	1,865,207	20,982,177	65,141	911,086	607,391	-
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡	294,609	13,630,077	-	-	91,631	2,180,367	60,672,520	-	589,058	2,902,185	-	4,006,288
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)	634,242	13,638,564	16,540,343	36,154,731	91,631	3,025,512	62,537,727	20,982,177	654,199	3,813,271	607,391	4,006,288



ComEd Summary Impact Evaluation Report

Sector	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Income Eligible Gas (Therms)	102,197	102,197	102,197	102,197	102,197							
All Other Gas (Therms)	(1,265)	(1,265)	(1,265)	(1,265)	(1,265)							
Income Eligible Gas (kWh Equivalent)†	2,995,395	2,995,395	2,995,395	2,995,395	2,995,395							
All Other Gas (kWh Equivalent)‡	(37,077)	(37,077)	(37,077)	(37,077)	(37,077)							
CY2019 Portfolio Total Gas CPAS (Therms)	100,932	100,932	100,932	100,932	100,932	-	-	-	-	-	-	-
CY2019 Portfolio Total Gas CPAS (kWh Equivalent)§	2,958,318	2,958,318	2,958,318	2,958,318	2,958,318	-	-	-	-	-	-	-
Historic Portfolio Total Gas Contribution to CPAS (kWh Equivalent Counted)	6,330,146	6,330,146	6,330,146	6,330,146								
Portfolio Total Gas CPAS (kWh Equivalent)†§	9,288,464	9,288,464	9,288,464	9,288,464	2,958,318	-	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Gas Savings (Therms)	455,507	-	-	-	-	100,932	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡§	13,350,923	-	-	-	-	2,958,318	-	-	-	-	-	-
Historic Portfolio Incremental Expiring Gas Savings (kWh Equivalent)‡	-	-	-	-	6,330,146	-	-	-	-	-	-	-
Portfolio Total Incremental Expiring Gas Savings (kWh Equivalent)	13,350,923	-	-	-	6,330,146	2,958,318	-	-	-	-	-	-

Note: The green highlighted cell shows program total first year gas savings in kWh equivalents. The gray cells are blank, indicating no values or do not contribute to calculating CPAS in CY2019.

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

† Income Eligible kWh equivalent savings are calculated by multiplying therm savings by 29.31.

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

§ Portfolio kWh equivalent savings are calculated by multiplying therm savings by 29.31.

|| Historic savings go back to CY2018.

†§ Portfolio Total Gas CPAS (kWh Equivalent) is the sum of CY2019 equivalent kWh CPAS and historic equivalent kWh CPAS.

‡§ kWh equivalent portfolio total incremental savings are calculated by multiplying therm savings by 29.31.

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

Source: Evaluation team analysis



ComEd Summary Impact Evaluation Report

Below is the list of programs and measures with gas savings which were counted towards the ComEd CPAS goal.

Table 2-6. Measure List and Savings from Gas Counting Toward ComEd Goal

Sector	Program	CY2019 Verified Gross Savings (Therms)	CY2019 Verified Gross Savings (kWh Equivalent)	CY2019 Verified Net Savings (Therms)	CY2019 Verified Net Savings (kWh Equivalent)	Counted Measures (EUL)
Income Eligible	Income Eligible (All)	1,478,610	43,338,050	1,478,610	43,338,050	All Income Eligible Measure and EUL were counted
Business	Incentives - Standard	700,998	20,546,254	546,779	16,026,078	Building Energy Management System (15), Energy Recovery Ventilator (15), Guest Room Energy Management System (15)
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	76,187	2,233,054	51,807	1,518,476	Therms removing interactive effects (17.4)
Residential	Appliance Rebates	1,311,733	38,446,897	1,273,062	37,313,450	Clothes Washer (14), Advanced Thermostat (11)
Residential	Residential HVAC	180,408	5,287,746	122,536	3,591,534	Ground Source Heat Pump - ER (25), Ductless Heat Pump - TOS (15), Ductless Heat Pump - ER (15)
Pilots	IE Program Design Pilot	9,159	268,447	9,159	268,447	Air Sealing (20), Insulation: Attic (20), Insulation: Band Joist (20), Insulation: Crawl Space (20), Insulation: Dense Pack (20), Insulation: Foundation (20), Insulation: Injection Foam (20), Gas Pipe Insulation (15)
Pilots	IE Senior Design Pilot	4,262	124,926	4,262	124,926	Air Sealing (20)
Portfolio		3,761,357	110,245,373	3,486,215	102,180,962	

Note: This table is showing only gross and net gas savings counted towards ComEd goal in CY2019. Results shown for programs in sectors other than Income Eligible may be different from program specific reports.

Source: Evaluation team analysis



ComEd Summary Impact Evaluation Report

Table 2-7. Total CPAS Counting Toward ComEd Goal

Sector	Program	WAML	CY2019 Verified Gross Savings (kWh)	NTG*	Lifetime Net Savings (kWh)†	Verified Net kWh Savings (Including Those Converted from Gas Savings)									
						2018	2019	2020	2021	2022	2023	2024	2025	2026	
Business	Business Instant Discounts	9.9	306,616,482	0.81	2,349,286,754		249,177,524	234,734,968	229,181,737	228,943,389	222,218,258	212,505,709	204,354,981	130,794,989	
Business	Incentives - Standard	12.6	273,678,710	0.82	2,763,697,408		223,427,936	223,427,936	223,215,355	222,977,410	220,708,226	217,168,897	215,911,422	215,631,081	
Business	Small Business - Private	14.0	179,317,629	0.92	2,060,833,826		164,972,218	164,972,218	163,797,228	163,656,743	163,209,105	137,542,960	137,542,960	137,218,708	
Business	LED Streetlighting	12.0	91,536,753	1.00	1,085,008,536		91,536,753	91,536,753	91,536,753	91,536,753	89,857,690	89,857,690	89,857,690	89,857,690	
Business	Incentives - Custom	15.4	50,327,327	0.53	392,043,313		26,468,108	26,468,108	26,468,108	26,468,108	26,468,108	25,756,007	25,756,007	25,756,007	
Business	Industrial Systems	7.2	40,404,017	0.77	204,197,559		31,111,093	30,027,195	29,903,276	12,263,437	12,263,437	11,885,323	11,885,323	10,306,669	
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGLNSG)	8.4	33,349,771	0.94	264,270,255		31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	31,348,785	
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)	17.4	29,787,223	0.68	352,442,417		20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	
Business	Strategic Energy Management (Joint w/Nicor Gas & PGLNSG)	5.0	23,296,606	1.00	116,483,031		23,296,606	23,296,606	23,296,606	23,296,606	23,296,606	23,296,606	23,296,606	23,296,606	
Business	Virtual Commissioning	8.6	14,422,775	1.00	138,458,643		14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	14,422,775	
Business	Small Business - Public	10.1	11,602,593	0.92	101,985,150		10,674,385	10,674,385	10,585,445	9,907,310	9,733,600	9,504,655	9,504,655	9,504,655	
Business	Small Business Kits	12.6	6,942,747	0.92	40,331,185		6,377,081	6,377,081	5,361,226	5,361,226	5,361,226	1,660,805	1,660,805	1,573,959	
Business	Business Grocery	14.9	6,044,385	0.92	77,386,496		5,560,834	5,560,834	5,543,895	5,543,895	5,512,091	4,998,479	4,998,479	4,998,479	
Business	Business Telecomm	10.0	5,109,849	0.71	36,115,724		3,627,993	3,627,993	3,627,993	3,627,993	3,627,993	3,531,638	3,531,638	3,416,493	
Business	Facility Assessments	4.6	3,578,494	0.94	15,351,676		3,363,784	3,363,784	3,363,784	2,630,162	2,630,162				
Business	Nonprofit Retrofits	9.0	3,430,859	0.92	28,483,445		3,156,390	3,156,390	3,156,390	3,156,390	3,156,390	3,009,343	3,009,343	3,009,343	
Business	Agriculture	14.5	497,211	0.83	5,968,397		410,675	410,675	410,675	410,675	410,675	410,675	410,675	410,675	
Residential	Lighting Discounts	10.4	283,967,289	0.61	894,620,160		173,374,006	173,374,006	113,007,998	112,855,112	109,161,414	38,101,548	36,498,142	36,498,142	
Residential	Appliance Rebates	11.2	77,398,231	0.93	796,807,691		71,855,584	71,855,584	71,855,584	71,855,584	71,855,584	71,855,584	71,855,584	70,427,224	
Residential	Fridge & Freezer Recycling	6.5	40,959,489	0.50	131,815,805		20,378,327	20,378,327	20,378,327	20,378,327	20,133,119	20,133,119	10,036,260		
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	9.2	32,385,490	0.85	154,186,907		27,420,368	27,420,368	20,901,529	20,901,529	20,901,529	9,629,933	8,655,059	6,045,122	
Residential	Residential HVAC	15.4	18,994,164	0.69	187,095,253		13,155,926	13,155,926	13,155,926	13,155,926	13,155,926	13,155,926	11,931,112	11,931,112	
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGLNSG)	8.4	15,285,371	0.92	96,644,176		14,131,467	14,125,994	12,178,755	12,109,400	12,109,168	8,428,186	6,758,076	6,052,969	
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	9.6	9,715,863	0.95	65,606,467		9,211,683	9,211,683	5,897,888	5,897,888	5,897,888	5,897,888	5,897,888	5,897,888	
Residential	Weatherization	20.0	605,461	1.00	11,756,935		607,730	607,730	607,730	607,730	607,730	607,730	607,730	607,730	
Residential	Residential New Construction (Joint w/Nicor Gas)	18.0	395,948	0.65	4,632,592		257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366	
Residential	Residential Behavior	5.0	-	-	136,820,857		55,129,576	39,693,295	24,113,676	12,458,733	5,425,577				
Income Eligible	Food Bank-LED Distribution	9.5	76,763,976	1.00	342,830,665		76,763,976	76,763,976	26,475,244	26,475,244	26,475,244	21,976,305	21,976,021	21,974,885	
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	9.9	59,026,580	1.00	352,743,099		59,026,580	59,026,580	37,833,407	37,833,407	37,231,350	19,873,639	19,708,289	19,464,157	
Income Eligible	UIC-ERC Income Eligible Kits	9.6	34,579,026	1.00	274,910,619		34,579,026	34,579,026	27,276,683	27,276,683	27,276,683	27,276,683	27,276,683	23,723,183	
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)	12.4	17,650,002	1.00	209,541,781		17,650,002	17,639,596	17,155,614	16,930,482	16,930,096	16,044,266	9,609,325	9,574,774	
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)	18.6	9,121,562	1.00	157,464,197		9,121,562	9,121,562	8,884,328	8,884,328	8,884,328	8,607,768	8,601,349	8,541,221	
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	7.1	7,553,428	1.00	53,474,216		7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	7,553,428	258,659	
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	20.9	6,316,384	1.00	115,575,104		6,316,384	6,316,384	6,281,708	6,281,708	6,153,713	6,096,548	5,049,127	5,049,127	
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	8.0	3,023,818	1.00	20,103,572		3,023,818	3,022,492	2,349,465	2,318,748	2,312,070	1,956,317	1,042,024	987,810	
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	14.3	2,964,691	1.00	41,927,785		2,964,691	2,964,691	2,896,140	2,896,140	2,896,140	2,896,140	2,896,140	2,896,140	
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	16.0	2,829,382	1.00	31,893,306		2,829,382	2,829,382	2,186,191	2,186,191	2,169,222	2,071,622	1,526,569	1,525,763	
Income Eligible	Manufactured Housing Retrofit	13.9	903,336	1.00	11,388,807		903,336	903,336	826,243	826,243	826,243	791,571	777,674	753,340	
Pilots	IE Program Design Pilot	18.6	336,667	1.00	5,968,207		336,667	336,667	322,404	322,404	322,404	308,792	307,502	306,292	
Pilots	IE Senior Design Pilot	16.8	196,177	1.00	3,186,450		196,177	196,177	182,327	182,327	182,327	182,327	182,327	182,327	
Pilots	Ductless Heat Pump and Building Envelope Pilot	20.0	12,593	1.00	251,861		12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	
All	Voltage Optimization	15.0	184,041,503	1.00	2,760,622,546		184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	
CY2019 Portfolio Total Contribution to CPAS (kWh)							1,964,929,864	16,894,216,446							
Historic Portfolio Total Contribution to CPAS†															
Legacy Savings (kWh)§							1,859,781,075	1,726,757,624	1,643,474,098	1,367,548,963	1,302,019,691	1,225,942,445	1,196,873,360	1,093,081,102	1,009,802,359
Portfolio Total CPAS (kWh)							1,859,781,075	7,514,025,516	6,849,556,870	6,003,685,963	5,513,351,584	5,099,818,469	4,649,309,917	4,275,608,225	3,933,134,328
CY2019 Portfolio Incremental Expiring Savings 								30,979,941	17,942,071	31,801,407	23,052,908	185,637,248	34,107,213	101,993,675	
Historic Portfolio Incremental Expiring Savings†§								133,023,450	83,283,526	275,925,136	65,529,272	76,077,246	29,069,085	103,792,258	83,278,742
Legacy Incremental Expiring Savings								471,604,440	550,205,180	393,003,700	393,003,700	314,402,960	235,802,220	235,802,220	157,201,480
Portfolio Grand Total Incremental Expiring Savings§§								604,627,890	664,468,647	845,870,907	490,334,380	413,533,114	450,508,553	373,701,692	342,473,897
Progress towards Applicable Annual Incremental Goal (AAI)§§§										1,095,401,522					



ComEd Summary Impact Evaluation Report

Sector	Program	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Business	Business Instant Discounts	119,129,076	112,890,827	100,553,699	81,404,674	76,907,640	75,343,830	71,145,455	0				
Business	Incentives - Standard	203,960,733	194,728,349	187,022,361	128,678,313	86,741,442	69,055,021	67,342,581	8,338,751	8,338,751	8,338,751	8,338,751	8,338,751
Business	Small Business - Private	131,225,194	131,129,991	122,341,278	116,607,588	115,399,587	105,618,038	105,530,604	13,881	13,881	13,881	13,881	13,881
Business	LED Streetlighting	89,857,690	89,857,690	89,857,690	89,857,690	89,857,690	89,857,690	89,857,690					
Business	Incentives - Custom	25,756,007	25,756,007	25,756,007	25,756,007	25,756,007	13,588,772	13,408,548	3,840,134	3,688,899	3,396,810	3,146,310	3,146,310
Business	Industrial Systems	8,728,015	8,728,015	8,647,470	8,647,470	8,647,470	5,576,684	5,576,684					
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	13,479,977											
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	20,255,311	8,102,125		
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)												
Business	Virtual Commissioning	14,422,775	8,653,665										
Business	Small Business - Public	8,874,729	7,031,416	3,834,159	2,110,922	14,944	14,944	14,944					
Business	Small Business Kits	1,573,959	976,908	883,838	790,768	790,768	790,768	790,768					
Business	Business Grocery	4,994,402	4,994,402	4,950,167	4,950,167	4,950,167	4,915,101	4,915,101					
Business	Business Telecomm	3,301,349	3,301,349	178,658	178,658	178,658	178,658	178,658					
Business	Facility Assessments												
Business	Nonprofit Retrofits	3,009,343	332,060	332,060									
Business	Agriculture	401,207	401,207	401,207	369,845	369,845	369,845	369,845					
Residential	Lighting Discounts	29,582,476	28,626,825	8,827,085	8,827,085	8,827,085	8,827,085	8,232,351					
Residential	Appliance Rebates	70,427,224	65,748,380	65,743,911	8,216,315	4,802,873	4,802,873	1,208,634	1,208,634	1,032,898	41,873	41,873	38,631
Residential	Fridge & Freezer Recycling												
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	5,817,397	5,817,397	643,155	8,381	8,381	8,381	8,381					
Residential	Residential HVAC	11,859,910	11,859,910	11,859,910	10,561,469	10,561,469	10,561,469	10,561,469	2,022,667	1,888,533	1,888,533	96,019	96,019
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	4,163,369	3,281,012	1,988,226	1,142,305	60,898	60,898	53,450					
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	5,897,888	5,897,888										
Residential	Weatherization	607,730	607,730	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963	567,963
Residential	Residential New Construction (Joint w/Nicor Gas)	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366	257,366		
Residential	Residential Behavior												
Income Eligible	Food Bank-LED Distribution	21,974,885	21,974,885										
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	19,464,157	19,464,157	4,843,371	4,843,371	4,843,371	4,843,371	4,443,890					
Income Eligible	UIC-ERC Income Eligible Kits	22,822,983	22,822,983										
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	9,300,583	9,237,181	8,701,260	8,476,827	8,173,722	8,140,614	8,140,614	5,584,394	5,584,394	5,566,982	5,555,527	5,555,527
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	8,482,800	8,482,800	7,251,442	6,858,696	6,858,696	6,998,226	6,998,226	6,986,299	6,986,299	6,986,299	6,986,299	6,941,671
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	258,659	27,634	27,634									
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	5,049,127	5,049,127	4,939,299	4,696,313	4,590,850	4,195,193	4,195,193	4,165,297	4,100,156	4,090,160	4,060,544	4,033,929
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	978,271	845,113	707,772	411,347	29,392	29,392	27,510	19,875	19,875	7,426	7,426	7,426
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,891,373	2,178,534	1,880,300	1,844,402	1,844,402	1,232,985	1,212,673	932,020	932,020	932,020	677,068	343,961
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	1,505,244	1,505,244	1,285,998	1,165,370	1,164,712	1,167,758	1,167,758	1,157,826	1,155,834	1,145,804	1,059,450	974,545
Income Eligible	Manufactured Housing Retrofit	622,346	622,346	422,462	368,184	368,184	368,184	368,184	328,957	328,957	327,672	327,672	327,672
Pilots	IE Program Design Pilot	306,178	306,178	283,153	279,836	279,836	279,836	279,836	278,199	278,199	278,199	278,199	277,424
Pilots	IE Senior Design Pilot	182,327	174,632	157,518	131,740	131,740	131,740	131,740	131,740	131,740	131,740	131,740	131,740
Pilots	Ductless Heat Pump and Building Envelope Pilot	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593	12,593
All	Voltage Optimization	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503	184,041,503					
CY2019 Portfolio Total Contribution to CPAS (kWh)		1,055,476,155	1,007,878,415	869,455,831	722,346,115	577,436,876	532,234,403	521,437,833	56,101,907	55,573,668	42,076,196	31,301,316	30,808,044
Historic Portfolio Total Contribution to CPAS†		971,319,275	676,264,227	629,996,277	421,082,681	369,918,427	355,073,342	66,006,450	60,200,162	46,267,210	31,442,260	31,085,270	7,676,988
Legacy Savings (kWh)§		1,650,615,540	1,414,813,320	1,336,212,580									
Portfolio Total CPAS (kWh)		3,677,410,971	3,098,955,962	2,835,664,688	1,143,428,796	947,355,303	887,307,745	587,444,283	116,302,068	101,840,878	73,518,456	62,386,586	38,485,032
CY2019 Portfolio Incremental Expiring Savings 		60,038,794	47,597,740	138,422,584	147,109,716	144,909,239	45,202,473	10,796,570	465,335,926	528,239	13,497,472	10,774,880	493,272
Historic Portfolio Incremental Expiring Savings†§		38,483,084	295,055,049	46,267,950	208,913,596	51,164,254	14,845,085	289,066,892	5,806,289	13,932,952	14,824,950	356,990	23,408,282
Legacy Incremental Expiring Savings		157,201,480	235,802,220	78,600,740	1,336,212,580	-	-	-	-	-	-	-	-
Portfolio Grand Total Incremental Expiring Savings†§		255,723,358	578,455,009	263,291,274	1,692,235,892	196,073,493	60,047,558	299,863,462	471,142,214	14,461,190	28,322,422	11,131,871	23,901,554
Progress towards Applicable Annual Incremental Goal (AAIG) §													



ComEd Summary Impact Evaluation Report

Sector	Program	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Business	Business Instant Discounts												
Business	Incentives - Standard	7,296,096	7,296,096	7,296,096	59,150	59,150							
Business	Small Business - Private												
Business	LED Streetlighting												
Business	Incentives - Custom	3,146,310	3,146,310	3,146,310									
Business	Industrial Systems												
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)												
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)												
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)												
Business	Virtual Commissioning												
Business	Small Business - Public												
Business	Small Business Kits												
Business	Business Grocery												
Business	Business Telecomm												
Business	Facility Assessments												
Business	Nonprofit Retrofits												
Business	Agriculture												
Residential	Lighting Discounts												
Residential	Appliance Rebates	38,631	38,631										
Residential	Fridge & Freezer Recycling												
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)												
Residential	Residential HVAC	96,019	96,019	96,019	96,019	96,019							
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)												
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)												
Residential	Weatherization												
Residential	Residential New Construction (Joint w/Nicor Gas)												
Residential	Residential Behavior												
Income Eligible	Food Bank-LED Distribution												
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]												
Income Eligible	UIC-ERC Income Eligible Kits												
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]												
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	2,973,796	2,973,796	2,973,734	2,973,734	2,973,734							
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)												
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	343,961	343,961	343,961	343,961	343,961							
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	24,230	24,230	21,661	21,661	21,661							
Income Eligible	Manufactured Housing Retrofit												
Pilots	IE Program Design Pilot												
Pilots	IE Senior Design Pilot												
Pilots	Ductless Heat Pump and Building Envelope Pilot												
All	Voltage Optimization												
CY2019 Portfolio Total Contribution to CPAS (kWh)		13,919,044	13,919,044	13,877,781	3,494,525	3,494,525	-	-	-	-	-	-	-
Historic Portfolio Total Contribution to CPAS†		7,676,988	7,676,988	7,387,734	7,387,734	15							
Legacy Savings (kWh)§													
Portfolio Total CPAS (kWh)		21,596,032	21,596,032	21,265,514	10,882,258	3,494,540	-	-	-	-	-	-	-
CY2019 Portfolio Incremental Expiring Savings 		16,889,000	-	41,263	10,383,256	-	3,494,525	-	-	-	-	-	-
Historic Portfolio Incremental Expiring Savings†§		-	-	289,254	-	7,387,719	15	-	-	-	-	-	-
Legacy Incremental Expiring Savings		-	-	-	-	-	-	-	-	-	-	-	-
Portfolio Grand Total Incremental Expiring Savings‡§		16,889,000	-	330,518	10,383,256	7,387,719	3,494,540	-	-	-	-	-	-
Progress towards Applicable Annual Incremental Goal (AAIG) §													

Note: The green highlighted cell shows program total first year electric savings (including direct electric savings and those converted from gas). The gray cells are blank, indicating no values or do not contribute to calculating CPAS in CY2019.

* A deemed value. Source is to be found on the IL SAG web site here: https://www.ilsag.info/ntg_2019.

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

‡ Historic savings go back to CY2018.

§ Legacy savings are cumulative persisting annual savings from energy efficiency measures implemented from January 1, 2012 - December 31, 2017, as deemed by the Future Energy Jobs Act.

|| Incremental expiring savings are equal to CPAS Y_{n-1} - CPAS Y_n .

†§ Historic incremental expiring savings are equal to Historic CPAS Y_{n-1} - Historic CPAS Y_n .

‡§ Portfolio total incremental expiring savings is equal to current year total incremental expiring savings plus historic total incremental expiring savings and legacy incremental expiring savings.

||§ AAIG is equal to CPAS Y_n - CPAS Y_{n-1} .

Source: Evaluation team analysis

2.3 Weighted Average Measure Life

Guidehouse calculated the weighted average measure life (WAML) for the CY2019 programs as 11.0 years excluding Voltage Optimization and 11.3 years including Voltage Optimization.

The equation to calculate the portfolio level WAML is shown in Equation 4 where the summation occurs across all programs with savings during CY2019, except for Voltage Optimization. The WAML calculation includes the electric-equivalent of the gas savings that ComEd can claim toward goal, as discussed in the previous section. It does not include all gas savings.

Equation 4. Portfolio Level WAML Calculation

$$WAML = \frac{\sum(\text{Program Level WAML} * \text{Program Level First Year Verified Gross Savings})}{\sum(\text{Program Level First Year Verified Gross Savings})}$$

Where

Program Level WAML

is the program level WAML

Program Level Verified Gross Savings

is the ex post gross verified savings for the program that occurred during CY2019⁸

The program level WAML is calculated as shown in Equation 5 where the summation occurs across all the measures⁹ in the program.

Equation 5. Program Level WAML Calculation

$$\text{Program Level WAML} = \frac{\sum(\text{Measure Level EUL} * \text{Measure Level First Year Verified Gross Savings})}{\sum(\text{Measure Level First Year Verified Gross Savings})}$$

Where

Measure Level EUL

is the effective useful life (EUL) for each measure in the program¹⁰

Measure Level Verified Gross Savings

is the ex post gross verified savings during the period for each measure in the program

Table 2-8 shows savings for each program and the calculated WAML.

⁸ Including electric and claimable gas savings.

⁹ Not all programs have measures (for example New Construction). In these cases, the EUL is aggregated from whatever level program savings are reported at (e.g. building, project, etc.).

¹⁰ EUL values are either provided in the TRM or through Guidehouse research.

Table 2-8. WAML and Verified Gross Savings by Program

Sector	Program	First Year Verified Gross Savings (kWh)	WAML
Business			
Business	Business Instant Discounts	306,616,482	9.9
Business	Incentives - Standard	273,678,710	12.6
Business	Small Business - Private	179,317,629	14.0
Business	LED Streetlighting	91,536,753	12.0
Business	Incentives - Custom	50,327,327	15.4
Business	Industrial Systems	40,404,017	7.2
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	33,349,771	8.4
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	29,787,223	17.4
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	23,296,606	5.0
Business	Virtual Commissioning	14,422,775	8.6
Business	Small Business - Public	11,602,593	10.1
Business	Small Business Kits	6,942,747	12.6
Business	Business Grocery	6,044,385	14.9
Business	Business Telecomm	5,109,849	10.0
Business	Facility Assessments	3,578,494	4.6
Business	Nonprofit Retrofits	3,430,859	9.0
Business	Agriculture	497,211	14.5
Business	Subtotal	1,079,943,430	11.7
Residential			
Residential	Lighting Discounts	283,967,289	10.4
Residential	Appliance Rebates	77,398,231	11.2
Residential	Residential Behavior*	55,129,576	5.0
Residential	Fridge & Freezer Recycling	40,959,489	6.5
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	32,385,490	9.2
Residential	Residential HVAC	18,954,164	15.4
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	15,285,371	8.4
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	9,715,863	9.6
Residential	Weatherization	605,461	20.0
Residential	Residential New Construction (Joint w/Nicor Gas)	395,948	18.0
Residential	Subtotal	534,796,883	9.7
Income Eligible			
Income Eligible	Food Bank-LED Distribution	76,763,976	9.5
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	59,026,580	9.9
Income Eligible	UIC-ERC Income Eligible Kits	34,579,026	9.6
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	17,650,002	12.4
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	9,121,562	18.6
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	7,553,428	7.1
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	6,316,384	20.9
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	3,023,818	8.0
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,964,691	14.3
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	2,829,382	16.0
Income Eligible	Manufactured Housing Retrofit	903,336	13.9
Income Eligible	Subtotal	220,732,186	10.6
Pilots			
Pilots	IE Program Design Pilot	336,667	18.6
Pilots	IE Senior Design Pilot	196,177	16.8
Pilots	Ductless Heat Pump and Building Envelope Pilot	12,593	20.0
Pilots	Subtotal	545,437	18.0
Portfolio	Grand Total	1,836,017,937	11.0
All			
All	Voltage Optimization	184,041,503	15.0
All	Subtotal	184,041,503	15.0
Portfolio	Total Including VO	2,020,059,440	11.3

Note: Verified Gross Savings include both electric savings and converted kWh equivalents from gas counted towards goal, and secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd. The WAML values in this table will differ from Table 2-3 for programs that saved gas because some programs have different electric and gas WAML based on measure types and whether they saved gas. Therefore the WAML shown in this table is a weighted value for programs that saved both electric and gas. * No verified gross savings. Verified Net savings is used for WAML calculation.

Source: Evaluation team analysis

3. SAVINGS BY PROGRAM

The savings by program are shown in the following tables and figures. The results include secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd. Details of those measures are discussed in the next section.

Table 3-1. Energy Savings by Program – Electric Only

Sector	Program	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)
Business	Business Instant Discounts	289,426,898	1.06	306,616,482	0.81	249,177,524
Business	Incentives - Standard	275,020,884	0.92	253,132,456	0.82	207,401,858
Business	Small Business - Private	179,362,890	1.00	179,317,629	0.92	164,972,218
Business	LED Streetlighting	91,409,071	1.00	91,536,753	1.00	91,536,753
Business	Incentives - Custom	53,718,053	0.94	50,327,327	0.53	26,468,108
Business	Industrial Systems	43,057,134	0.94	40,404,017	0.77	31,111,093
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	35,441,530	0.94	33,349,771	0.94	31,348,785
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	27,226,891	1.01	27,554,169	0.68	18,736,835
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	23,219,051	1.00	23,296,606	1.00	23,296,606
Business	Virtual Commissioning	14,970,001	0.96	14,422,775	1.00	14,422,775
Business	Small Business - Public	11,978,872	0.97	11,602,593	0.92	10,674,385
Business	Small Business Kits	5,015,674	1.38	6,942,747	0.92	6,377,081
Business	Business Grocery	6,044,385	1.00	6,044,385	0.92	5,560,834
Business	Business Telecomm	5,148,179	0.99	5,109,849	0.71	3,627,993
Business	Facility Assessments	3,955,766	0.90	3,578,494	0.94	3,363,784
Business	Nonprofit Retrofits	3,459,320	0.99	3,430,859	0.92	3,156,390
Business	Agriculture	497,211	1.00	497,211	0.83	410,675
Business	Subtotal	1,068,951,810	0.99	1,057,164,123	0.84	891,643,699
Residential	Lighting Discounts	246,991,886	1.15	283,967,289	0.61	173,374,006
Residential	Fridge & Freezer Recycling	39,932,322	1.03	40,959,489	0.50	20,378,327
Residential	Appliance Rebates	41,084,634	0.95	38,951,334	0.89	34,542,134
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	34,186,597	0.95	32,385,490	0.85	27,420,368
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	15,436,840	0.99	15,285,371	0.92	14,131,467
Residential	Residential HVAC	14,532,315	0.94	13,666,419	0.70	9,564,392
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	8,429,847	1.15	9,715,863	0.95	9,211,683
Residential	Weatherization	637,646	0.95	605,461	1.00	607,730
Residential	Residential New Construction (Joint w/Nicor Gas)	518,095	0.76	395,948	0.65	257,366
Residential	Residential Behavior†	-	-	-	-	55,129,576
Residential	Subtotal	401,750,183	1.09	435,932,664	0.79	344,617,048
Income Eligible	Food Bank-LED Distribution	61,524,375	1.25	76,763,976	1.00	76,763,976
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	59,985,883	0.98	59,026,580	1.00	59,026,580
Income Eligible	UIC-ERC Income Eligible Kits	16,775,650	1.17	19,602,134	1.00	19,602,134
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	7,566,157	1.00	7,553,428	1.00	7,553,428
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	4,240,711	0.89	3,781,962	1.00	3,781,962
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	3,136,747	0.96	3,023,818	1.00	3,023,818
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,378,159	0.96	2,292,235	1.00	2,292,235
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	2,488,910	0.89	2,217,921	1.00	2,217,921
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	2,138,464	1.00	2,148,166	1.00	2,148,166
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	673,045	0.97	653,216	1.00	653,216
Income Eligible	Manufactured Housing Retrofit	336,477	0.98	330,700	1.00	330,700
Income Eligible	Subtotal	161,244,577	1.10	177,394,136	1.00	177,394,136
Pilots	IE Senior Design Pilot	211,058	0.34	71,251	1.00	71,251
Pilots	IE Program Design Pilot	70,708	0.96	68,220	1.00	68,220
Pilots	Ductless Heat Pump and Building Envelope Pilot	11,691	1.08	12,593	1.00	12,593
Pilots	Subtotal	293,457	0.52	152,064	1.00	152,064
All	Voltage Optimization	196,300,500	0.94	184,041,503	1.00	184,041,503
All	Subtotal	196,300,500	0.94	184,041,503	1.00	184,041,503
Portfolio	Grand Total	1,828,540,528	1.01	1,854,684,490	0.86	1,597,848,450

* The program-level NTG values shown in this table is 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/ntg_2019. Programs without ex ante gross or verified gross values were excluded from the calculation of the portfolio realization rate and NTG. These programs are typically those where consumption data analysis is used to calculate net savings directly.

† Program did not report ex ante gross savings, and thus the evaluation did not calculate verified gross savings but only verified net savings. Source: Evaluation team analysis.

Table 3-2 and Table 3-3 show total demand and summer peak demand savings by program.

Table 3-2. Demand Savings by Program

Sector	Program	Ex Ante Gross Savings (kW)	Verified Gross Realization Rate	Verified Gross Savings (kW)	NTG*	Verified Net Savings (kW)
Business	Business Instant Discounts	69,365	1.12	77,675	0.81	63,151
Business	Small Business - Private	NR	NA	62,799	0.92	57,775
Business	Incentives - Standard	NR	NA	44,727	0.82	36,670
Business	LED Streetlighting	21,242	1.00	21,272	1.00	21,272
Business	Small Business Kits	-	-	8,815	0.92	8,106
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	5,488	0.99	5,433	0.68	3,694
Business	Small Business - Public	NR	NA	2,460	0.92	2,263
Business	Virtual Commissioning	NR	NA	1,646	1.00	1,646
Business	Business Grocery	NR	NA	1,163	0.92	1,070
Business	Business Telecomm	NR	NA	690	0.71	490
Business	Agriculture	122	1.00	122	0.83	102
Business	Incentives - Custom	NR	NA	NA	NA	NA
Business	Industrial Systems	NR	NA	NA	NA	NA
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	NR	NA	NA	NA	NA
Business	Facility Assessments	NR	NA	NA	NA	NA
Business	Nonprofit Retrofits	NR	NA	NA	NA	NA
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	NR	NA	NA	NA	NA
Business	Subtotal	96,218	2.45	226,803	0.87	196,240
Residential	Lighting Discounts	NR	NA	242,022	0.61	148,097
Residential	Appliance Rebates	NR	NA	42,126	0.88	36,895
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	NR	NA	33,910	0.86	29,008
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	NR	NA	28,079	0.98	27,562
Residential	Residential HVAC	NR	NA	9,492	0.71	6,746
Residential	Fridge & Freezer Recycling	NR	NA	7,620	0.50	3,798
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	NR	NA	6,883	0.89	6,131
Residential	Weatherization	NR	NA	604	1.00	606
Residential	Residential Behavior	NR	NA	NA	NA	NA
Residential	Residential New Construction (Joint w/Nicor Gas)	NR	NA	NA	NA	NA
Residential	Subtotal	NR	NA	370,736	0.70	258,844
Income Eligible	Food Bank-LED Distribution	NR	NA	69,593	1.00	69,593
Income Eligible	Lighting Discounts - IE (Combined with Appliance Rebates - IE)	NR	NA	47,396	1.00	47,396
Income Eligible	UIC-ERC Income Eligible Kits	NR	NA	38,059	1.00	38,059
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	NR	NA	2,403	1.00	2,403
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	NR	NA	2,048	1.00	2,048
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	NR	NA	1,253	1.00	1,253
Income Eligible	Appliance Rebates - IE (Combined with Lighting Discounts - IE)	NR	NA	1,180	1.00	1,180
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	NR	NA	1,147	1.00	1,147
Income Eligible	Manufactured Housing Retrofit	NR	NA	787	1.00	787
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	NR	NA	732	1.00	732
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	NR	NA	588	1.00	588
Income Eligible	Subtotal	NR	NA	165,187	1.00	165,187
Pilots	IE Senior Design Pilot	NR	NA	91	1.00	91
Pilots	IE Program Design Pilot	NR	NA	83	1.00	83
Pilots	Ductless Heat Pump and Building Envelope Pilot	NR	NA	0.15	1.00	0.15
Pilots	Subtotal	NR	NA	174	1.00	174
All	Voltage Optimization	NR	NA	NA	NA	NA
All	Subtotal	NR	NA	NA	NA	NA
Portfolio	Grand Total	96,218	7.93	762,900	0.81	620,445

* The program-level NTG values shown in this table is 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/mtg_2019. Programs without ex ante gross or verified gross values were excluded from the calculation of the portfolio realization rate and NTG. These programs are typically those where consumption data analysis is used to calculate net savings directly.

† Program did not report ex ante gross savings, and thus the evaluation did not calculate verified gross savings but only verified net savings.

NR – Not reported

NA – Not applicable or not calculated

Source: Evaluation team analysis.

Table 3-3. Summer Peak Demand Savings by Program

Sector	Program	Ex Ante Gross Savings (kW)	Verified Gross Realization Rate	Verified Gross Savings (kW)	Verified Net Savings NTG*	Verified Net Savings (kW)
Business	Business Instant Discounts	59,380	1.03	61,241	0.81	49,771
Business	Incentives - Standard	40,626	0.89	35,967	0.82	29,649
Business	Small Business - Private	27,385	1.00	27,267	0.92	25,086
Business	Industrial Systems	6,252	1.28	8,021	0.78	6,256
Business	Incentives - Custom	6,084	0.91	5,510	0.55	3,027
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	4,289	1.17	5,018	0.68	3,412
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG)	1,505	1.19	1,785	0.94	1,678
Business	Virtual Commissioning	NR	NA	1,414	1.00	1,414
Business	Small Business Kits	871	1.59	1,388	0.92	1,275
Business	Small Business - Public	1,364	0.98	1,340	0.92	1,233
Business	Business Grocery	891	1.00	891	0.92	819
Business	Nonprofit Retrofits	671	1.00	671	0.92	618
Business	Business Telecomm	708	0.77	547	0.71	388
Business	Agriculture	NR	NA	93	0.83	78
Business	LED Streetlighting	NR	NA	0.6	1.00	0.6
Business	Facility Assessments	NR	NA	NA	NA	NA
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	NR	NA	NA	NA	NA
Business	Subtotal	150,026	1.01	151,154	0.83	124,705
Residential	Lighting Discounts	NR	NA	37,668	0.61	23,041
Residential	Appliance Rebates	9,502	0.97	9,221	0.91	8,429
Residential	Fridge & Freezer Recycling	NR	NA	5,855	0.50	2,916
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGL/NSG)	4,580	0.96	4,387	0.85	3,731
Residential	Residential HVAC	5,329	0.76	4,055	0.69	2,779
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	1,914	1.00	1,907	0.92	1,762
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	960	1.22	1,168	0.94	1,102
Residential	Residential New Construction (Joint w/Nicor Gas)	388	0.77	297	0.65	193
Residential	Weatherization	312.08	0.90	282	1.00	283
Residential	Residential Behavior	NR	NA	NA	NA	NA
Residential	Subtotal	22,984	2.82	64,841	0.68	44,235
Income Eligible	Food Bank-LED Distribution	7,438	1.21	9,026	1.00	9,026
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	NR	NA	7,709	1.00	7,709
Income Eligible	UIC-ERC Income Eligible Kits	2,126	1.12	2,387	1.00	2,387
Income Eligible	Appliance Rebates - IE (Combined with Lighting Discounts - IE)	903	0.98	887	1.00	887
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGL/NSG)	995	0.83	821	1.00	821
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	618	1.00	618	1.00	618
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGL/NSG)	603	0.96	577	1.00	577
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	371	0.94	351	1.00	351
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	287	0.95	273	1.00	273
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGL/NSG)	263	1.00	266	1.00	266
Income Eligible	Manufactured Housing Retrofit	66	0.88	58	1.00	58
Income Eligible	Subtotal	13,670	1.68	22,972	1.00	22,972
Pilots	IE Program Design Pilot	20	0.96	20	1.00	20
Pilots	IE Senior Design Pilot	18	0.99	18	1.00	18
Pilots	Ductless Heat Pump and Building Envelope Pilot	NR	NA	NA	1.00	NA
Pilots	Subtotal	38	0.98	38	1.00	38
All	Voltage Optimization	NR	NA	31,983	1.00	31,983
All	Subtotal	NR	NA	31,983	1.00	31,983
Portfolio	Grand Total	186,718	1.45	270,988	0.83	223,932

* The program-level NTG values shown in this table is 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/ntg_2019. Programs without ex ante gross or verified gross values were excluded from the calculation of the portfolio realization rate and NTG. These programs are typically those where consumption data analysis is used to calculate net savings directly.

† Program did not report ex ante gross savings, and thus the evaluation *did not calculate verified gross savings but only verified net savings*.

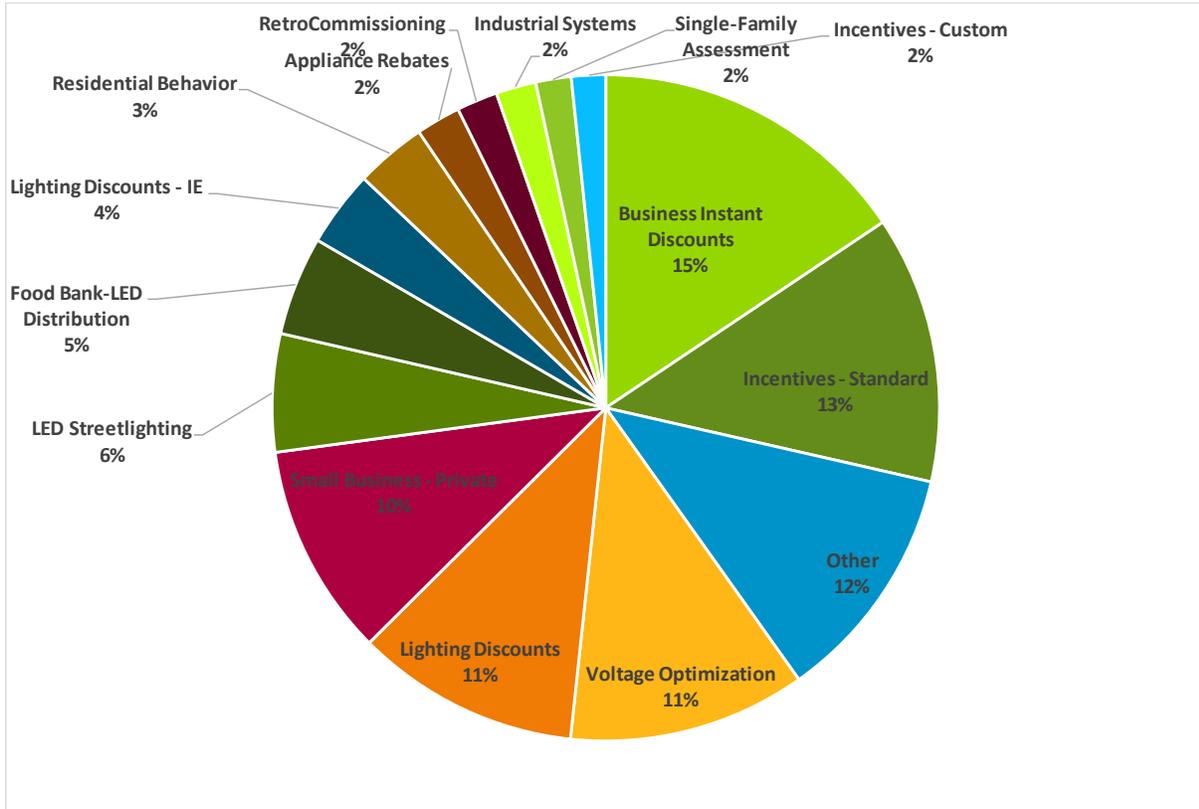
NR – Not reported

NA – Not applicable or not calculated

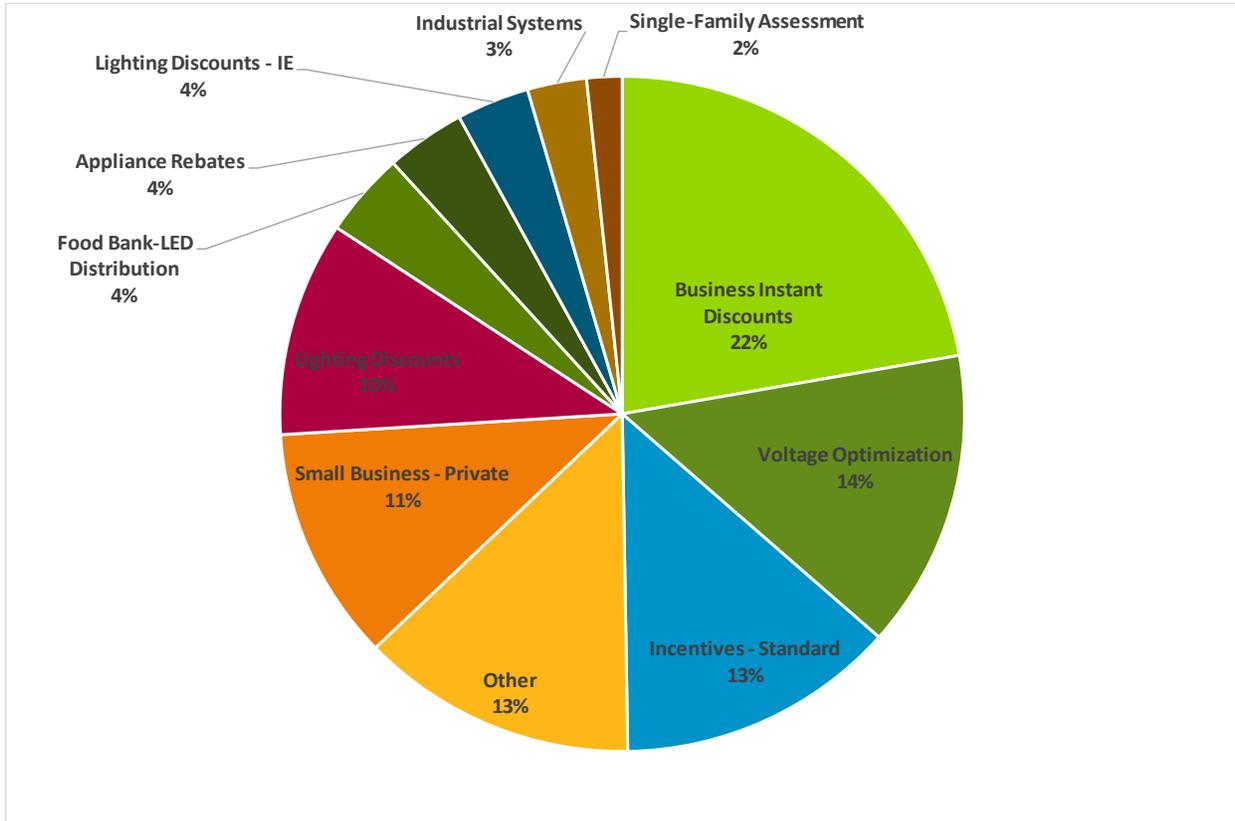
Source: *Evaluation team analysis.*

The following figures show energy and summer peak demand savings for the CY2019 programs with highest net savings impact.

Figure 3-1. Net Energy Savings by Program – Electric Only



Source: Evaluation team analysis.

Figure 3-2. Net Peak Demand Savings by Program


Source: Evaluation team analysis.

The following table shows the net savings compared to goal by CY2019 programs with highest net savings impact.

Table 3-4. Comparing Electric Net Goals to Actual Achieved by CY2019 Program

Sector	Program	Verified Net Electric Savings (kWh)	2019 Original Plan Savings Goal (kWh)	Implementation Plan Savings Goal (kWh)	Verified Net over Original Plan	Verified Net over Implementation Plan
Business	Business Instant Discounts	240,959,744	232,418,851	238,945,010	1.04	1.01
Business	Incentives - Custom + Standard	233,869,966	320,000,852	238,896,133	0.73	0.98
Business	Small Business - Public + Private	175,646,604	158,680,066	174,599,942	1.11	1.01
Business	LED Streetlighting	91,536,753	93,001,704	87,293,000	0.98	1.05
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGL/NSG) + VCx	45,771,560	30,188,436	51,665,000	1.52	0.89
Business	Industrial Systems	31,111,093	27,275,603	28,026,035	1.14	1.11
Business	Strategic Energy Management (Joint w/Nicor Gas & PGL/NSG)	23,296,606	27,977,500	14,633,000	0.83	1.59
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGL/NSG)	18,736,835	29,684,928	15,091,000	0.63	1.24
Business	Small Business Kits	5,916,014	189,049	4,686,000	31.29	1.26
Business	Business Grocery	5,560,834	-	4,572,000	-	1.22
Business	Business Telecomm	3,627,993	-	3,644,250	-	1.00
Business	Facility Assessments	3,363,784	1,654,145	3,428,414	2.03	0.98
Business	Nonprofit Retrofits	3,156,390	-	2,000,000	-	1.58
Business	Agriculture	410,675	-	421,520	-	0.97
Business	Subtotal	882,964,851	921,071,134	867,901,304	0.96	1.02
Residential	Lighting Discounts	150,907,892	94,658,086	147,293,000	1.59	1.02
Residential	Residential Behavior	55,129,576	74,936,000	58,792,000	0.74	0.94
Residential	Appliance Rebates	34,542,134	31,027,960	37,514,800	1.11	0.92
Residential	Single-Family Assessment (Joint w/Nicor Gas & PG/NSG)	27,420,368	17,889,550	27,631,482	1.53	0.99
Residential	Fridge & Freezer Recycling	20,378,327	21,702,515	18,738,680	0.94	1.09
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGL/NSG)	14,131,467	9,196,819	14,084,996	1.54	1.00
Residential	Residential HVAC + Weatherization	10,172,122	9,693,755	9,309,000	1.05	1.09
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGL/NSG)	7,698,962	2,344,952	8,798,000	3.28	0.88
Residential	Residential New Construction (Joint w/Nicor Gas & PGL/NSG)	257,366	570,741	212,000	0.45	1.21
Residential	Subtotal	320,638,214	262,020,378	322,373,958	1.22	0.99
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	64,669,828	12,771,388	62,379,900	5.06	1.04
Income Eligible	Food Bank-LED Distribution	61,472,616	2,981,229	61,524,000	20.62	1.00
Income Eligible	UIC-ERC Income Eligible Kits	17,258,621	1,085,487	16,779,000	15.90	1.03
Income Eligible	Multi-Family Retrofits - IE + IHWAP (Joint w/Nicor Gas & PGL/NSG)	4,435,178	4,877,421	6,852,000	0.91	0.65
Income Eligible	Single-Family Retrofits - CBA + IHWAP (Joint w/Nicor Gas & PGL/NSG)	4,366,087	6,984,870	4,626,000	0.63	0.94
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGL/NSG)	3,023,818	1,825,514	2,732,820	1.66	1.11
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,292,235	1,344,711	2,403,000	1.70	0.95
Income Eligible	Manufactured Housing Retrofit	330,700	-	351,000	-	0.94
Income Eligible	Subtotal	157,849,084	31,870,620	157,647,720	4.95	1.00
Pilot Income Eligible	IE Senior Design Pilot	71,251	-	-	-	-
Pilot Residential	IE Program Design Pilot	68,220	-	-	-	-
Pilot Income Eligible	Ductless Heat Pump and Building Envelope Pilot	12,593	-	-	-	-
Pilot Income Eligible	Subtotal	152,064	-	-	-	-
All	Voltage Optimization	184,041,503	200,000,000	193,341,000	0.86	0.89
All	Subtotal	184,041,503	200,000,000	193,341,000	0.92	0.95
Other	Lighting Carryover	52,202,734	-	53,094,428	-	-
Other	Therm Conversion	102,180,962	-	102,180,962	-	1.00
Portfolio	Grand Total	1,700,029,412	1,414,962,133	1,696,539,372	1.20	1.00

Source: Goals values are from the ComEd - CY2019 Q4 Statewide Quarterly Report; ICC approved plan compliance filing (Commission's Final Order approving the EE Plan. For Section 8-104 programs); Evaluation team analysis.

4. SAVINGS BY MEASURE

Lighting measures contributed the most energy and demand savings to the portfolio by a substantial margin as shown in the end-use type categories in Table 4-1, Table 4-2, and Figure 4-1. Lighting measures contributed 65% of the portfolio net electric savings in CY2019. The Voltage Optimization program follows with 12% of net electric savings, 4% from HVAC measures, 3% from Residential Behavior, and 16% from all other measures.

Table 4-1. Energy Savings by Measure Category – Electric Only

End Use Type	Ex Ante Gross Savings (kWh)	Verified Gross Savings (kWh)	Verified Net Savings (kWh)
Lighting	1,199,553,694	1,259,439,318	1,035,161,190
Voltage Optimization	196,300,500	184,041,503	184,041,503
Other	148,194,130	143,179,894	112,313,376
HVAC	87,385,548	82,965,971	71,108,500
Behavioral	-	-	55,129,576
Appliances	62,967,846	64,199,992	39,540,849
Refrigeration	40,413,943	39,863,394	33,489,246
Compressed Air	40,571,447	38,736,163	30,218,665
Industrial System	13,421,602	12,729,307	9,816,341
Consumer Electronics	9,943,837	9,972,854	9,092,442
Hot Water	9,167,886	9,771,908	9,667,432
EMS & BAS	17,192,706	6,713,766	5,202,320
Shell	3,427,389	3,070,420	3,067,013
Grand Total	1,828,540,528	1,854,684,490	1,597,848,450

Note: The savings in this table includes secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd.

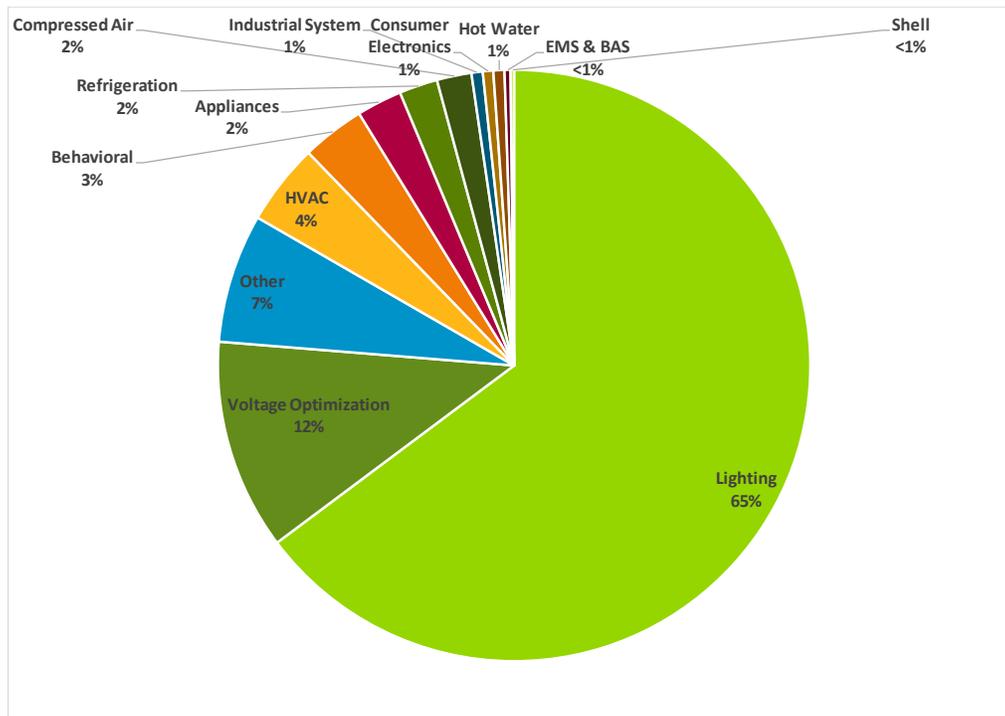
Note: Lifetime savings at the end-use level is a simple aggregation of net savings multiplied by unweighted measure level EUL values.

Source: *Evaluation team analysis.*

Table 4-2. Summer Peak Demand Savings by Measure Category

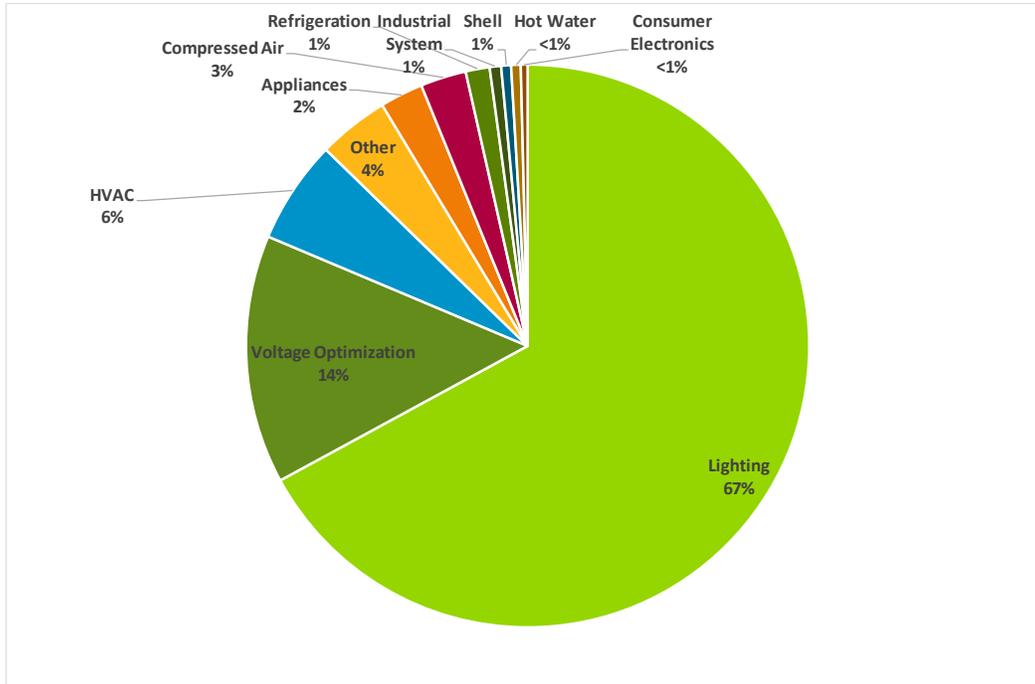
End Use Type	Ex Ante Gross Savings (kW)	Verified Gross Savings (kW)	Verified Net Savings (kW)
Lighting	136,823	185,207	150,194
Voltage Optimization	NR	31,983	31,983
Other	11,029	12,824	9,117
HVAC	19,606	15,464	13,295
Appliances	3,252	9,107	5,550
Compressed Air	6,548	7,420	5,880
Refrigeration	4,144	3,665	3,085
Industrial System	1,677	1,876	1,464
Shell	1,482	1,265	1,265
Hot Water	1,218	1,237	1,231
Consumer Electronics	941	940	870
Behavioral	-	-	-
EMS & BAS	-	-	-
Grand Total	186,718	270,988	223,932

Source: Evaluation team analysis

Figure 4-1. Net Energy Savings by End-use Type – Electric Only


Source: Evaluation Analysis

Figure 4-2. Net Peak Demand Savings by End-use Type



Source: Evaluation Analysis

Table 4-3 shows the end use measure savings by magnitude of impact in the respective portfolio sector. Lighting measures contributed the majority at 74% of net energy savings in the business sector, 62% in the residential sector, 89% in the income eligible sector, and 49% from the pilot programs. Next is the behavioral programs which contributed 16% in the net energy savings in the residential sector. In addition to lighting, HVAC and shell measures contributed 28% and 20% respectively for the pilot programs.

Table 4-3. Energy Savings by Measure Category and Sector – Electric Only

Sector	End Use Type	Ex Ante Gross Savings (kWh)	Verified Gross Savings (kWh)	Verified Net Savings (kWh)	Percent Impact
Business	Lighting	763,534,730	771,001,351	663,392,745	74%
Business	Other	147,676,035	142,783,946	112,056,010	13%
Business	HVAC	43,285,980	42,305,967	34,815,784	4%
Business	Compressed Air	40,571,447	38,736,163	30,218,665	3%
Business	Refrigeration	40,384,910	39,834,361	33,461,261	4%
Business	EMS & BAS	17,192,706	6,713,766	5,202,320	1%
Business	Industrial System	13,421,602	12,729,307	9,816,341	1%
Business	Consumer Electronics	1,599,590	1,624,783	1,360,853	0%
Business	Hot Water	1,228,638	1,378,313	1,268,048	0%
Business	Shell	56,173	56,164	51,671	0%
Business Subtotal	Subtotal	1,068,951,810	1,057,164,123	891,643,699	100%
Residential	Lighting	294,227,125	330,619,977	213,950,454	62%
Residential	Appliances	54,755,572	55,989,843	31,330,700	9%
Residential	HVAC	41,532,394	38,271,139	33,903,850	10%
Residential	Hot Water	5,520,857	5,477,900	5,483,689	2%
Residential	Consumer Electronics	4,665,945	4,669,766	4,053,284	1%
Residential	Other	518,095	395,948	257,366	0%
Residential	Shell	509,228	487,123	488,209	0%
Residential	Refrigeration	20,968	20,968	19,920	0%
Residential	Behavioral	-	-	55,129,576	16%
Residential Subtotal	Subtotal	401,750,183	435,932,664	344,617,048	100%
Income Eligible	Lighting	141,718,539	157,743,409	157,743,409	89%
Income Eligible	Appliances	8,212,274	8,210,148	8,210,148	5%
Income Eligible	Consumer Electronics	3,677,238	3,677,238	3,677,238	2%
Income Eligible	Shell	2,771,792	2,483,801	2,483,801	1%
Income Eligible	HVAC	2,440,433	2,358,879	2,358,879	1%
Income Eligible	Hot Water	2,416,236	2,912,596	2,912,596	2%
Income Eligible	Refrigeration	8,065	8,065	8,065	0%
Income Eligible Subtotal	Subtotal	161,244,577	177,394,136	177,394,136	100%
Pilots	HVAC	126,741	29,986	29,986	20%
Pilots	Shell	90,196	43,332	43,332	28%
Pilots	Lighting	73,300	74,582	74,582	49%
Pilots	Hot Water	2,155	3,098	3,098	2%
Pilots	Consumer Electronics	1,065	1,067	1,067	1%
Pilot Subtotal	Subtotal	293,457	152,064	152,064	100%
All	Other	196,300,500	184,041,503	184,041,503	100%
All (Votalge Optimization) Subtotal	Subtotal	196,300,500	184,041,503	184,041,503	100%
Portfolio Total		1,828,540,528	1,854,684,490	1,597,848,450	100%

Note: The savings in this table includes secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd.

Source: Evaluation team analysis

Fifteen (15) programs include measures that save water. That reduction in water produced secondary kWh savings from water supply and wastewater treatment. Table 4-4 shows the secondary measure level savings. The savings in this table are included within the electricity savings in the previous tables in this section.

Table 4-4. Secondary Energy Savings from Water Reduction by Measure – Electric Only

Sector	Program	End Use Type	Research Category	Ex Ante Annual Water Savings (gallons)	Ex Ante Gross Savings (kWh)	Verified Gross		NTG*	Verified Net Savings (kWh)
						Realization Rate (RRwater)	Verified Gross Savings (kWh)		
Business	Small Business Kits	Hot Water	Kitchen & Bathroom Faucet Aerator	NR	NR	NA	95,392	0.92	87,761
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)	Other	Whole Building	17,850,401	55,009	1.00	55,009	0.88	37,406
Business	Small Business Kits	Hot Water	High Efficiency Pre-Rinse Spray Valve	NR	NR	NA	44,145	0.92	40,613
Business	Small Business - Private	Hot Water	Bathroom Faucet Aerator	811,362	NR	NA	22,714	0.92	20,897
Business	Small Business - Private	Hot Water	High Efficiency Pre-Rinse Spray Valve	259,459	NR	NA	11,186	0.92	10,291
Business	Small Business - Private	Hot Water	Low Flow Showerhead	48,606	NR	NA	2,435	0.92	2,240
Business	Subtotal			18,969,828	55,009	4.20	230,881	0.86	199,208
Residential	Appliance Rebates	Appliances	Clothes Washer	132,585,165	533,792	0.37	199,965	0.62	123,978
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	22,456,393	84,651	1.00	84,651	1.00	84,651
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen Faucet Aerator	15,783,529	59,497	1.00	59,497	1.00	59,497
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Bathroom Faucet Aerator	3,884,413	14,643	1.00	14,643	1.00	14,643
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Shower Timer	2,707,112	10,205	1.00	10,205	1.00	10,205
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	1,916	7	1.015	7,266	1.04	7,566
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen & Bathroom Faucet Aerator	278	1	1.019	1,063	1.04	1,105
Residential	Multi-Family - Market Rate (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	14,230	NR	NA	2,478	1.00	2,478
Residential	Multi-Family - Market Rate (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen & Bathroom Faucet Aerator	4,490	NR	NA	652	1.00	652
Residential	Subtotal			177,437,526	702,796	0.54	380,418	0.80	304,765
Income Eligible	UIC-ERC Income Eligible Kits	Hot Water	Kitchen & Bathroom Faucet Aerator	67,786,866	-	-	243,880	1.00	243,880
Income Eligible	UIC-ERC Income Eligible Kits	Hot Water	Low Flow Showerhead	66,464,266	-	-	239,122	1.00	239,122
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	2,094,541	243	26.06	6,337	1.00	6,337
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen Faucet Aerator	1,979,657	988	6.29	6,207	1.00	6,207
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	1,040,751	3,115	1.00	3,116	1.00	3,116
Income Eligible	Manufactured Housing Retrofit	Hot Water	Low Flow Showerhead	497,990	-	-	2,495	1.00	2,495
Income Eligible	Manufactured Housing Retrofit	Hot Water	Kitchen Faucet Aerator	430,269	-	-	2,156	1.00	2,156
Income Eligible	Manufactured Housing Retrofit	Hot Water	Bathroom Faucet Aerator	220,872	-	-	1,107	1.00	1,107
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	147,530	739	1.00	739	1.00	739
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen & Bathroom Faucet Aerator	163,445	819	0.81	664	1.00	664
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen Faucet Aerator	102,403	513	1.00	513	1.00	513
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen & Bathroom Faucet Aerator	72,749	364	1.00	365	1.00	365
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)	Hot Water	Kitchen & Bathroom Faucet Aerator	108,516	326	1.00	326	1.00	326
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	26,298	132	1.01	133	1.00	133
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	Hot Water	Low Flow Showerhead	29,350	147	0.68	100	1.00	100
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	Appliances	Refrigerator & Freezer	674	-	-	-	-	-
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	HVAC	Advanced Thermostat	674	-	-	-	-	-
Income Eligible	Subtotal			141,166,851	7,387	68.67	507,259	1.00	507,259
Pilots	IE Program Design Pilot	Hot Water	Low Flow Showerhead	NR	NR	NA	799	1.00	799
Pilots	IE Program Design Pilot	Hot Water	Kitchen Faucet Aerator	NR	NR	NA	93	1.00	93
Pilots	IE Program Design Pilot	Hot Water	Bathroom Faucet Aerator	NR	NR	NA	47	1.00	47
Pilots	Subtotal			NR	NR	NA	940	1.00	940
Portfolio	Total			337,574,206	765,192	1.46	1,119,498	0.90	1,012,171

Note: The savings in this table reflects only secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd, not those claimed by gas utilities.

* A deemed value. Source: is to be found on the IL SAG web site here: https://www.ilsag.info/ntg_2019.

NR – Not reported

NA – Not applicable or not calculated

Source: ComEd tracking data and evaluation team analysis

5. LIFETIME SAVINGS AND TOTAL RESOURCE COST SAVINGS SUMMARY

Table 5-1 provides the WAML and estimated lifetime savings from the verified first year gross and net savings (excluding converted gas savings measures). It includes the total cost by program and cost per unit. Table 5-2, below, shows the Total Resource Cost (TRC) table. It includes only the cost-effectiveness analysis savings inputs.



ComEd Summary Impact Evaluation Report

Table 5-1. Verified First Year and Lifetime Savings and Acquisition Costs – Electric Only

Sector	ComEd CY2019 Program	Verified Gross Realization Rate	First Year Annual Energy Savings (kWh) - Gross	First Year Peak Demand Savings (kW) - Gross	NTG	First Year Annual Energy Savings (kWh) - Net	First Year Peak Demand Savings (kW) - Net	Lifetime Savings (kWh) - Net *	First Year Cost per First Year Net Annual Savings	First Year Cost per Net Lifetime Savings	Program Costs	Units	Units # Definition	Weighted Average Measure Life
Business	Business Instant Discounts	1.06	306,616,482	61,241	0.81	249,177,524	49,771	2,349,286,754	0.07	0.01	17,162,175	2,897,096	Lamps	9.9
Business	Incentives - Custom + Standard	0.92	303,459,783	41,476	0.77	233,869,966	32,677	2,915,349,549	0.21	0.02	48,412,102	3,287	Projects	12.9
Business	Small Business - Private + Public	1.00	190,920,221	28,607	0.92	175,646,604	26,319	2,162,818,976	0.27	0.02	47,046,702	7,419	Projects	13.8
Business	LED Streetlighting	1.00	91,536,753	1	1.00	91,536,753	1	1,085,008,536	0.15	0.01	13,406,701	122,991	Lamps	12.0
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGLNSG) + VCx	0.95	47,772,546	3,199	0.96	45,771,560	3,092	402,728,897	0.28	0.03	13,005,235	149	Projects	8.5
Business	Industrial Systems	0.94	40,404,017	8,021	0.77	31,111,093	6,256	204,197,559	0.23	0.03	7,022,959	461	Measures	7.2
Business	Strategic Energy Management (Joint w/Nicor Gas & PGLNSG)	1.00	23,296,606		1.00	23,296,606		116,483,031	0.09	0.02	2,095,274	65	Projects	5.0
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)	1.01	27,554,169	5,018	0.68	18,736,835	3,412	326,020,928	0.33	0.02	6,142,504	33	Projects	17.4
Business	Small Business Kits	1.38	6,942,747	1,388	0.92	6,377,081	1,275	40,331,185	0.14	0.02	922,655	53,466	Measures	12.6
Business	Business Grocery	1.00	6,044,385	891	0.92	5,560,834	819	77,386,496	0.39	0.03	2,170,532	107	Measures	14.9
Business	Business Telecomm	0.99	5,109,849	546.88	0.71	3,627,993	388	36,115,724	0.41	0.04	1,470,701	42	Sites	10.0
Business	Facility Assessments	0.90	3,578,494	-	0.94	3,363,784	-	15,351,676	0.88	0.19	2,967,891	219	Measures	4.6
Business	Nonprofit Retrofits	0.99	3,430,859	671	0.92	3,156,390	618	28,483,445	0.78	0.09	2,457,990	678	Measures	9.0
Business	Agriculture	1.00	497,211	93	0.83	410,675	78	5,968,397	1.38	0.09	566,535	50	Measures	14.5
Business	Subtotal	0.99	1,057,164,123	151,154	0.84	891,643,699	124,705	9,765,531,153	0.18	0.02	164,849,957	3,086,063		11.6
Residential	Lighting Discounts	1.15	283,967,289	37,668	0.61	173,374,006	23,041	894,620,160	0.11	0.02	18,218,191	5,572,620	Lamps	10.4
Residential	Residential Behavior					55,129,576		136,820,857	0.08	0.03	4,449,853	1,519,734	Households	5.0
Residential	Appliance Rebates	0.95	38,951,334	9,221	0.89	34,542,134	8,429	380,811,814	0.51	0.05	17,546,111	181,974	Measures	11.1
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	0.95	32,385,490	4,387	0.85	27,420,368	3,731	154,186,907	0.26	0.05	7,251,532	203,650	Measures	9.2
Residential	Fridge & Freezer Recycling	1.03	40,959,489	5,855	0.50	20,378,327	2,916	131,815,805	0.40	0.06	8,223,388	51,822	Measures	6.5
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGLNSG)	0.99	15,285,371	1,907	0.92	14,131,467	1,762	96,644,176	0.74	0.11	10,495,102	723,003	Measures	8.4
Residential	Residential HVAC + Weatherization	0.94	14,271,880	4,336	0.71	10,172,122	3,062	153,743,490	0.72	0.05	7,328,050	30,329	Measures	15.7
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	1.15	9,715,863	1,168	0.95	9,211,683	1,102	65,606,467	0.15	0.02	1,352,326	57,961	Kits	9.6
Residential	Residential New Construction (Joint w/Nicor Gas)	0.76	395,948	297	0.65	257,366	193	4,632,592	1.30	0.07	333,416	827	Measures	18.0
Residential	Subtotal	1.09	435,932,664	64,841	0.79	344,617,048	44,235	2,018,882,268	0.22	0.04	75,197,970	8,341,920		10.1
Income Eligible	Food Bank-LED Distribution	1.25	76,763,976	9,026	1.00	76,763,976	9,026	342,830,665	0.06	0.01	4,556,501	2,264,092	Lamps	9.5
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	0.99	66,580,008	8,596	1.00	66,580,008	8,596	406,217,316	0.09	0.01	5,910,795	1,456,357	Lamps	9.6
Income Eligible	UIC-ERC Income Eligible Kits	1.17	19,602,134	2,387	1.00	19,602,134	2,387	125,141,693	0.21	0.03	4,071,590	594,498	Measures	9.3
Income Eligible	Multi-Family Retrofits - IE + IHWAP (Joint w/Nicor Gas & PGLNSG)	0.90	4,435,178	843	1.00	4,435,178	843	34,725,421	2.47	0.32	10,950,815	34,294	Measures	10.2
Income Eligible	Single Family Retrofits - CBA + IHWAP (Joint w/Nicor Gas & PGLNSG)	0.94	4,366,087	1,439	1.00	4,366,087	1,439	51,025,694	3.17	0.27	13,838,777	3,422	Projects	15.7
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	0.96	3,023,818	351	1.00	3,023,818	351	20,103,572	0.70	0.11	2,130,418	12,714	Measures	8.0
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	0.96	2,292,235	273	1.00	2,292,235	273	33,433,046	0.88	0.06	2,006,382	620	Households	14.8
Income Eligible	Manufactured Housing Retrofit	0.98	330,700	58	1.00	330,700	58	2,870,129	1.78	0.21	589,257	318	Participants	11.5
Income Eligible	Subtotal	1.10	177,394,136	22,972	1.00	177,394,136	22,972	1,016,347,536	0.25	0.04	44,054,536	4,366,315		9.7
Pilots	IE Senior Design Pilot	0.34	71,251	18	1.00	71,251	18	687,932				196	Participants	11.1
Pilots	IE Program Design Pilot	0.96	68,220	20	1.00	68,220	20	708,050				78	Participants	13.4
Pilots	Ductless Heat Pump and Building Envelope Pilot	1.08	12,593	0	1.00	12,593	0	251,861				1	Building	20.0
Pilots	Subtotal	0.52	152,064	38	1.00	152,064	38	1,647,843				275		12.9
All	Voltage Optimization	0.94	184,041,503	31,983	1.00	184,041,503	31,983	2,760,622,546				386	Feeders	15.0
All	Subtotal	0.94	184,041,503	31,983	1.00	184,041,503	31,983	2,760,622,546				386		15.0
Portfolio	Grand Total	1.01	1,854,684,490	270,988	0.86	1,597,848,450	223,933	15,563,031,347	0.18	0.02	284,102,463	15,794,959		

Note: the following programs have combined savings and cost information. Incentives Program (Standard + Custom + Data Center); Small Business (Small Business Private + Public Small Facilities); Multi-Family (Retrofits + IHWAP); Single Family Retrofit (CBA + IHWAP), HVAC + Weatherization. Cost information for pilot programs are not available. The lifetime net savings is equal to values from the electric CPAS Table 2-3.

* Combined programs noted above have different EULs, hence the total lifetime savings shown in this table are different from Table 3-1.

Source: Cost values are from the ComEd - CY2019 Q4 Statewide Quarterly Report; Evaluation team analysis.



ComEd Summary Impact Evaluation Report

Table 5-2. Total Resource Cost Savings Summary

Sector	Program	Verified Gross Electric Energy Savings (kWh)	Verified Gross Peak Demand Reduction (kW)	Verified Gross Gas Savings (Therms)	Gross Heating Penalty (kWh) ⁺	Gross Heating Penalty (Therms) [†]	NTG (kWh)	NTG (kW)	NTG (Therms)	Verified Net Electric Energy Savings (kWh)	Verified Net Peak Demand Reduction (kW)	Verified Net Gas Savings (Therms)	Net Heating Penalty (kWh)	Net Heating Penalty (Therms)	WAML
Business	Business Instant Discounts	306,616,482	61,241	-	-	(5,963,086)	0.81	0.81	-	249,177,524	49,771	-	-	(4,850,463)	9.9
Business	Incentives - Standard	253,132,456	35,967	736,290	-	(2,354,866)	0.82	0.82	0.78	207,401,858	29,649	574,306	-	(1,954,539)	12.6
Business	Small Business - Private	179,281,294	27,267	426,957	-	(2,118,017)	0.92	0.92	0.92	164,938,790	25,086	392,800	-	(1,948,576)	14.0
Business	LED Streetlighting	91,536,753	1	-	-	-	1.00	1.00	-	91,536,753	1	-	-	-	12.0
Business	Incentives - Custom	50,327,327	5,510	-	-	(21,165)	0.53	0.55	-	26,468,108	3,027	-	-	(11,853)	15.4
Business	Industrial Systems	40,404,017	8,021	-	-	-	0.77	0.78	-	31,111,093	6,256	-	-	-	7.2
Business	RetroCommissioning (Coordinated w/Nicor Gas & PGLNSG)	33,349,771	1,785	39,187	-	-	0.94	0.94	0.94	31,348,785	1,678	36,835	-	-	8.4
Business	Non-residential New Construction (Coordinated w/Nicor Gas & PGLNSG)	27,499,160	5,018	76,187	(96,804)	(58,549)	0.68	0.68	0.68	18,699,429	3,412	51,807	(65,827)	(39,813)	17.4
Business	Strategic Energy Management (Joint w/Nicor Gas & PGLNSG)	23,296,606	-	-	-	-	1.00	-	-	23,296,606	-	-	-	-	5.0
Business	Virtual Commissioning	14,422,775	1,414	-	-	-	1.00	1.00	-	14,422,775	1,414	-	-	-	8.6
Business	Small Business - Public	11,602,593	1,340	8,430	-	(134,783)	0.92	0.92	0.92	10,674,385	1,233	7,756	-	(124,000)	10.1
Business	Small Business Kits	6,803,210	1,388	144,655	-	(97,222)	0.92	0.92	0.92	6,248,708	1,275	133,083	-	(89,283)	12.6
Business	Business Grocery	6,044,385	891	-	-	(79,833)	0.92	0.92	-	5,560,834	819	-	-	(73,447)	14.9
Business	Business Telecomm	5,109,849	547	415	-	-	0.71	0.71	0.71	3,627,993	388	295	-	-	10.0
Business	Facility Assessments	3,578,494	-	34,708	-	-	0.94	-	0.94	3,363,784	-	32,626	-	-	4.6
Business	Nonprofit Retrofits	3,430,859	671	-	(28,461)	-	0.92	0.92	-	3,156,390	618	-	(26,184)	-	9.0
Business	Agriculture	497,211	93	-	-	-	0.83	0.83	-	410,675	78	-	-	-	14.5
Residential	Lighting Discounts	283,967,289	37,668	-	-	(6,334,101)	0.61	0.61	-	173,374,006	23,041	-	-	(3,863,945)	10.4
Residential	Fridge & Freezer Recycling	40,959,489	5,855	-	-	-	0.50	0.50	-	20,378,327	2,916	-	-	-	6.5
Residential	Appliance Rebates	38,751,369	9,221	3,984,383	-	-	0.89	0.91	0.99	34,418,156	8,429	3,945,712	-	-	11.2
Residential	Single-Family Assessment (Joint w/Nicor Gas & PGLNSG)	32,377,162	4,387	584	-	-	0.85	0.85	1.00	27,411,706	3,731	584	-	-	9.2
Residential	Multi-Family Assessments (Joint w/Nicor Gas & PGLNSG)	15,282,242	1,907	-	-	(198,420)	0.92	0.92	-	14,128,338	1,762	-	-	(168,657)	8.4
Residential	Residential HVAC ‡	13,666,419	4,055	438,383	-	-	0.70	0.69	0.87	9,564,392	2,779	380,511	-	-	15.4
Residential	Elementary Education Kits (Joint w/Nicor Gas & PGLNSG)	9,546,867	1,168	219,477	-	(44,742)	0.95	0.94	1.00	9,042,687	1,102	219,477	-	(37,583)	9.6
Residential	Weatherization	605,461	282	-	-	-	1.00	1.00	-	607,730	283	-	-	-	20.0
Residential	Residential New Construction (Joint w/Nicor Gas)	395,948	297	-	-	-	0.65	0.65	-	257,366	193	-	-	-	18.0
Residential	Residential Behavior	-	-	-	-	-	-	-	-	55,129,576	-	-	-	-	5.0
Income Eligible	Food Bank-LED Distribution	76,763,976	9,026	-	-	(1,479,811)	1.00	1.00	-	76,763,976	9,026	-	-	(1,479,811)	9.5
Income Eligible	Lighting Discounts - IE [Combined with Appliance Rebates - IE]	59,026,580	7,709	-	-	(1,319,518)	1.00	1.00	-	59,026,580	7,709	-	-	(1,319,518)	9.9
Income Eligible	UIC-ERC Income Eligible Kits	19,119,132	2,387	510,982	-	(254,037)	1.00	1.00	1.00	19,119,132	2,387	510,982	-	(254,037)	9.6
Income Eligible	Appliance Rebates - IE [Combined with Lighting Discounts - IE]	7,553,428	887	-	-	-	1.00	1.00	-	7,553,428	887	-	-	-	7.1
Income Eligible	Multi-Family Retrofits - IE (Joint w/Nicor Gas & PGLNSG)	3,769,418	577	473,150	-	(49,178)	1.00	1.00	1.00	3,769,418	577	473,150	-	(49,178)	12.4
Income Eligible	Public Housing Retrofits (Joint w/Nicor Gas & PGLNSG)	3,022,566	351	-	(91,881)	(49,201)	1.00	1.00	-	3,022,566	351	-	(91,881)	(49,201)	8.0
Income Eligible	Affordable Housing New Construction (Joint w/Nicor Gas)	2,292,235	273	22,943	-	(3,660)	1.00	1.00	1.00	2,292,235	273	22,943	-	(3,660)	14.3
Income Eligible	Single-Family Retrofits - CBA (Joint w/Nicor Gas & PGLNSG)	2,214,478	821	235,539	-	(14,516)	1.00	1.00	1.00	2,214,478	821	235,539	-	(14,516)	18.6
Income Eligible	Single-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	2,147,669	618	23,242	-	(20,277)	1.00	1.00	1.00	2,147,669	618	23,242	-	(20,277)	16.0
Income Eligible	Multi-Family Retrofits - IHWAP (Joint w/Nicor Gas & PGLNSG)	652,452	266	193,216	-	(3,236)	1.00	1.00	1.00	652,452	266	193,216	-	(3,234)	20.9
Income Eligible	Manufactured Housing Retrofit	324,943	58	19,537	-	3,320	1.00	1.00	1.00	324,943	58	19,537	-	3,320	13.9
Pilots	IE Senior Design Pilot	71,251	18	12,418	-	(781)	1.00	1.00	1.00	71,251	18	12,418	-	(781)	16.8
Pilots	IE Program Design Pilot	67,280	20	11,603	-	(701)	1.00	1.00	1.00	67,280	20	11,603	-	(701)	18.6
Pilots	Ductless Heat Pump and Building Envelope Pilot	12,593	0.1	-	-	-	1.00	1.00	-	12,593	0.1	-	-	-	20.0
All	Voltage Optimization	184,041,503	31,983	-	-	-	1.00	1.00	-	184,041,503	31,983	-	-	-	15.0
Total		1,853,564,993	270,988	7,612,287	(217,147)	(20,596,383)	-	-	-	1,596,836,279	223,933	7,278,424	(183,893)	(16,353,754)	11.3

Note: To avoid double counting, the verified gross kWh and net kWh used in the TRC analysis excludes secondary energy savings from water reduction measures. Table 5-2 represents the kWh savings from Table 3-1 minus those shown in Table 4-4.

* Program savings account for electric heating penalties as required by the TRM. The electric heating penalty columns show absolute estimates (some programs calculated electric heating penalty but did not break them out separately in this column, hence the total electric heating penalty shown does not represent the portfolio total electric heating penalty).

† Gross heating penalty (therms) are shown as absolute estimates. The total represents the portfolio therms heating penalty. These penalties are not required to be applied to the portfolio savings.

‡ The heating penalty kWh and therms values for Residential HVAC Rebates Program are the fuel switch savings estimates for cost effectiveness analysis.

Source: Evaluation team analysis

6. HIGH IMPACT MEASURES

Table 6-1, Table 6-2 and Table 6-3 provide the list of CY2019 high impact measures and the percentage of verified gross electric savings for the Residential, Business, and Income Eligible sectors. The savings in these tables excludes converted gas savings.

Table 6-1. Summary Table of CY2019 High Impact Measures – Residential

Sector	High Impact Measure	End Use Type	First year kWh Savings (Verified Gross)	Weighted Average Measure Life	Lifetime Gross kWh (Verified)	Percent kWh	Cumulative Percent
Residential	LED Lamps	Lighting	218,281,098	9.3	2,021,943,650	50.1%	50.1%
Residential	LED Fixtures	Lighting	70,807,994	14.9	1,051,547,124	16.2%	66.3%
Residential	Freezer & Refrigerators - Recycled	Appliances	40,347,877	6.5	262,261,201	9.3%	75.6%
Residential	Carryover Lighting	Lighting	40,118,613	7.9	315,172,581	9.2%	84.8%
Residential	Advanced Thermostat	HVAC	24,179,231	11.0	265,971,538	5.5%	90.3%
Residential	ECM Furnace Blower & Motor	HVAC	7,840,846	15.0	117,612,686	1.8%	92.1%
Residential	Air Purifier	Appliances	5,998,518	9.0	53,986,662	1.4%	93.5%
Residential	Advanced Power Strips Tier 1	Consumer Electronics	4,669,766	7.0	32,688,363	1.1%	94.6%
Residential	Dehumidifier	Appliances	4,254,792	12.0	51,057,509	1.0%	95.5%
Residential	Room & Central Air Conditioner	HVAC	3,286,122	17.7	58,302,100	0.8%	96.3%
Residential	Low Flow Showerhead	Hot Water	3,034,930	10.0	30,349,304	0.7%	97.0%
Residential	Clothes Washer	Appliances	2,814,403	14.0	39,401,648	0.6%	97.6%
Residential	Heat Pumps (ASHP, Ductless HP, GSHP, Others)	HVAC	2,108,504	13.5	28,477,730	0.5%	98.1%
Residential	Refrigerator & Freezer	Appliances	1,691,237	17.2	29,084,059	0.4%	98.5%
Residential	Kitchen Faucet Aerator	Hot Water	1,588,921	10.0	15,889,214	0.4%	98.9%
Residential	LED Exit Signs, Channels & Traffic Signal	Lighting	1,411,677	5.0	7,058,386	0.3%	99.2%
Residential	Programmable/Reprogrammable Thermostat	HVAC	733,467	5.4	3,995,430	0.2%	99.4%
Residential	Room ACs - Recycled	Appliances	490,415	4.0	1,961,661	0.1%	99.5%
Residential	Attic/Wall/Basement /Floor/Foundation Insulation	Shell	407,059	20.0	8,141,181	0.1%	99.6%
Residential	Whole Building	Other	395,948	18.0	7,127,058	0.1%	99.7%
Residential	Shower Timer	Hot Water	392,417	2.0	784,833	0.1%	99.7%
Residential	Bathroom Faucet Aerator	Hot Water	323,453	10.0	3,234,534	0.1%	99.8%
Residential	Clothes Dryer	Appliances	266,267	16.0	4,260,275	0.1%	99.9%
Residential	Dehumidifiers - Recycled	Appliances	121,196	6.0	727,179	0.0%	99.9%
Residential	Duct Insulation & Sealing	HVAC	118,338	20.0	2,366,767	0.0%	99.9%
Residential	Air Sealing	Shell	92,657	20.0	1,853,134	0.0%	100.0%
Residential	Pipe Insulation	Hot Water	61,232	15.0	918,480	0.0%	100.0%
Residential	Kitchen & Bathroom Faucet Aerator	Hot Water	41,772	10.0	417,719	0.0%	100.0%
Residential	Water Heater Temperature SetBack	Hot Water	35,174	2.0	70,349	0.0%	100.0%
Residential	Vending Miser	Refrigeration	20,968	5.0	104,841	0.0%	100.0%
Residential	Water Cooler	Appliances	5,137	10.0	51,365	0.0%	100.0%
Residential	Bathroom Exhaust Fan	HVAC	4,631	19.0	87,981	0.0%	100.0%
Residential	Occupancy Sensor & Other Controls	Lighting	595	8.0	4,757	0.0%	100.0%
Residential	Behavioral Savings*	Behavioral	-	-	-	0.0%	100.0%

* WAML shown here is an estimated gross lifetime savings divided by gross 1st year savings. This may not represent the actual WAML for measure types where savings are aggregated (e.g. heat pumps, interior and exterior LED fixtures).

† The Residential Behavior Program does not have gross savings but has the second biggest net savings in the residential portfolio (see Table 3-1).

Source: Evaluation team analysis

Table 6-2. Summary Table of CY2019 High Impact Measures – Business

Sector	High Impact Measure	End Use Type	First year kWh Savings (Verified Gross)	Weighted Average Measure Life	Lifetime Gross kWh (Verified)	Percent kWh	Cumulative Percent
Business	LED Lamps	Lighting	247,336,186	10.1	2,507,082,487	19.9%	19.9%
Business	Other Lighting	Lighting	202,081,353	11.7	2,366,374,570	16.3%	36.2%
Business	LED Fixtures	Lighting	195,608,806	14.1	2,764,566,889	15.8%	52.0%
Business	Voltage Optimization	Other	184,041,503	15.0	2,760,622,546	14.8%	66.8%
Business	Streetlighting	Lighting	75,467,355	12.0	905,608,255	6.1%	72.9%
Business	Whole Building	Other	50,850,775	11.7	595,925,571	4.1%	77.0%
Business	RetroCommissioning	Other	47,772,546	8.5	405,174,436	3.8%	80.8%
Business	Compressor system	Compressed Air	37,607,241	6.8	257,507,152	3.0%	83.9%
Business	Other Non-lighting	Other	34,165,305	13.0	444,224,478	2.8%	86.6%
Business	Other Non-lighting	HVAC	28,655,367	17.1	489,580,369	2.3%	88.9%
Business	Linear Fluorescents	Lighting	26,258,072	12.7	333,125,703	2.1%	91.0%
Business	EC Motor for Cooler or Freezer	Refrigeration	15,647,358	14.1	220,324,709	1.3%	92.3%
Business	Other Non-lighting	Refrigeration	11,711,870	9.4	110,219,554	0.9%	93.2%
Business	Carryover Lighting	Lighting	11,073,941	7.9	87,272,298	0.9%	94.1%
Business	Other Non-lighting	Industrial System	9,170,530	14.3	131,201,156	0.7%	94.9%
Business	Occupancy Sensor & Other Controls	Lighting	6,769,427	7.6	51,494,348	0.5%	95.4%
Business	EMS	EMS & BAS	6,713,766	15.0	100,706,494	0.5%	95.9%
Business	Advanced Thermostat	HVAC	6,219,942	11.0	68,419,364	0.5%	96.5%
Business	LED Exit Signs, Channels & Traffic Signal	Lighting	6,017,180	5.5	33,247,945	0.5%	96.9%
Business	Process Cooling	Other	5,618,411	23.0	129,223,458	0.5%	97.4%
Business	Anti-Sweat Heater Controls for Glass Door Cooler or Refrigerator	Refrigeration	5,297,251	10.0	52,972,511	0.4%	97.8%
Business	Commercial Refrigeration	Refrigeration	4,296,360	15.0	64,445,405	0.3%	98.2%
Business	Waste Water Treatment	Other	3,779,333	13.0	49,131,332	0.3%	98.5%
Business	RetroCommissioning	Industrial System	3,558,777	7.5	26,690,827	0.3%	98.8%
Business	Variable Speed Drive	HVAC	2,108,746	15.0	31,631,186	0.2%	98.9%
Business	Kitchen Fan or Economizer with DCV	HVAC	1,972,562	10.0	19,725,621	0.2%	99.1%
Business	HVAC Control System & Maintenance	HVAC	1,252,263	4.8	5,976,979	0.1%	99.2%
Business	Battery Chargers	Consumer Electronics	1,125,537	15.0	16,883,055	0.1%	99.3%
Business	LED Refrigerated Display Case Lighting	Refrigeration	1,118,430	10.0	11,184,298	0.1%	99.4%
Business	Room & Central Air Conditioner	HVAC	907,497	15.0	13,612,459	0.1%	99.4%
Business	No-Loss Condensate Drains	Compressed Air	772,573	10.0	7,725,725	0.1%	99.5%
Business	Kitchen & Bathroom Faucet Aerator	Hot Water	648,968	9.0	5,840,711	0.1%	99.6%
Business	High Efficiency Pre-Rinse Spray Valve	Hot Water	624,899	5.0	3,124,495	0.1%	99.6%
Business	Motors/Fans/Pumps	Other	597,575	17.5	10,457,568	0.0%	99.6%
Business	Strip Curtains for Cooler or Freezer	Refrigeration	485,127	4.0	1,940,510	0.0%	99.7%
Business	Variable Speed Drive	Refrigeration	449,980	15.0	6,749,700	0.0%	99.7%
Business	Advanced Power Strips Tier 1	Consumer Electronics	443,361	7.0	3,103,524	0.0%	99.8%
Business	Programmable/Reprogrammable Thermostat	HVAC	441,903	2.9	1,291,621	0.0%	99.8%
Business	Auto Closer for Walk-in Cooler or Freezer	Refrigeration	423,425	8.0	3,387,400	0.0%	99.8%
Business	High-Efficiency Air Nozzles	Compressed Air	350,349	15.0	5,255,230	0.0%	99.9%
Business	Linear Fluorescent - Delamping	Lighting	302,751	10.9	3,302,868	0.0%	99.9%
Business	Restroom Exhaust Fan Occupancy Sensor	HVAC	282,152	8.0	2,257,219	0.0%	99.9%
Business	Geothermal	HVAC	265,293	13.0	3,448,812	0.0%	99.9%
Business	Beverage, Snack and Cooler Machine Controls	Refrigeration	208,876	5.0	1,044,381	0.0%	99.9%
Business	Air Conditioner Tune-Up	HVAC	200,240	3.0	600,720	0.0%	100.0%
Business	Bathroom Faucet Aerator	Hot Water	89,509	10.0	895,090	0.0%	100.0%
Business	Advanced Lighting Controls	Lighting	86,281	10.0	862,806	0.0%	100.0%
Business	Q-Sync Motors for Reach-in Coolers/Freezers	Refrigeration	65,679	10.0	656,785	0.0%	100.0%
Business	Other Non-lighting	Consumer Electronics	55,885	5.0	279,426	0.0%	100.0%
Business	Night Covers	Refrigeration	49,170	5.0	245,850	0.0%	100.0%
Business	Weather Stripping	Shell	47,406	10.0	474,060	0.0%	100.0%
Business	Evaporator Fan Control	Refrigeration	38,115	13.0	495,495	0.0%	100.0%
Business	Anti-Sweat Heater Controls	Refrigeration	36,801	10.0	368,010	0.0%	100.0%
Business	Cool Roof	Shell	8,758	20.0	175,169	0.0%	100.0%
Business	Low Flow Showerhead	Hot Water	8,608	10.0	86,081	0.0%	100.0%
Business	Roof Insulation or Replacement	Hot Water	6,329	20.0	126,586	0.0%	100.0%
Business	Efficient Refrigerated CA Dryer	Compressed Air	6,001	13.0	78,011	0.0%	100.0%
Business	ENERGY STAR Solid or Glass Door Refrigerator or Freezer	Refrigeration	3,090	12.0	37,080	0.0%	100.0%
Business	Automatic Door Closer	Refrigeration	2,829	8.0	22,632	0.0%	100.0%

* WAML shown here is an estimated gross lifetime savings divided by gross 1st year savings. This may not represent the actual WAML for measure types where savings are aggregated (e.g. heat pumps, interior and exterior LED fixtures).

Source: Evaluation team analysis

Table 6-3. Summary Table of CY2019 High Impact Measures – Income Eligible

Sector	High Impact Measure	End Use Type	First year kWh Savings (Verified Gross)	Weighted Average Measure Life	Lifetime Gross kWh (Verified)	Percent kWh	Cumulative Percent
Income Eligible	LED Lamps	Lighting	126,573,037	9.8	1,234,428,778	71.3%	71.3%
Income Eligible	Carryover Lighting	Lighting	19,545,052	8.0	156,648,256	11.0%	82.3%
Income Eligible	LED Fixtures	Lighting	7,879,729	12.0	94,565,379	4.4%	86.7%
Income Eligible	Advanced Power Strips Tier 1	Appliances	7,294,769	7.0	51,063,383	4.1%	90.9%
Income Eligible	Advanced Power Strips Tier 1	Consumer Electronics	3,677,873	7.0	25,745,110	2.1%	92.9%
Income Eligible	Linear Fluorescents	Lighting	3,544,603	9.2	32,700,830	2.0%	94.9%
Income Eligible	Low Flow Showerhead	Hot Water	1,551,648	10.0	15,516,479	0.9%	95.8%
Income Eligible	Kitchen & Bathroom Faucet Aerator	Hot Water	1,277,719	10.0	12,777,187	0.7%	96.5%
Income Eligible	Air Sealing	Shell	898,069	20.0	17,961,379	0.5%	97.0%
Income Eligible	Attic/Wall/Basement/Floor/Foundation Insulation	Shell	888,928	20.0	17,778,566	0.5%	97.5%
Income Eligible	Room & Central Air Conditioner	HVAC	613,598	17.6	10,786,935	0.3%	97.9%
Income Eligible	Other Non-lighting	Shell	594,907	20.3	12,066,147	0.3%	98.2%
Income Eligible	Other Non-lighting	HVAC	588,059	18.6	10,938,747	0.3%	98.5%
Income Eligible	Refrigerator & Freezer	Appliances	571,038	16.7	9,547,584	0.3%	98.9%
Income Eligible	High Efficiency Furnace	HVAC	327,988	20.0	6,559,755	0.2%	99.0%
Income Eligible	PTHP	HVAC	280,004	8.0	2,240,030	0.2%	99.2%
Income Eligible	Air Purifier	Appliances	231,025	9.0	2,079,225	0.1%	99.3%
Income Eligible	Advanced Thermostat	HVAC	183,129	11.0	2,014,415	0.1%	99.4%
Income Eligible	LED Exit Signs, Channels & Traffic Signal	Lighting	168,383	5.1	865,002	0.1%	99.5%
Income Eligible	Bathroom Exhaust Fan	HVAC	144,802	19.0	2,751,240	0.1%	99.6%
Income Eligible	Heat Pumps (ASHP, Ductless HP, GSHP, Others)	HVAC	118,842	12.5	1,488,081	0.1%	99.7%
Income Eligible	Appliance Recycling	Appliances	113,316	7.9	893,562	0.1%	99.7%
Income Eligible	Pipe Insulation	Shell	96,880	20.0	1,937,599	0.1%	99.8%
Income Eligible	Linear Fluorescent - Delamping	Lighting	71,226	11.0	783,488	0.0%	99.8%
Income Eligible	Kitchen Faucet Aerator	Hot Water	58,468	10.0	584,684	0.0%	99.9%
Income Eligible	ECM Furnace Blower & Motor	HVAC	44,259	15.0	663,883	0.0%	99.9%
Income Eligible	Programmable/Reprogrammable Thermostat	HVAC	42,020	7.8	327,696	0.0%	99.9%
Income Eligible	High-Performance Windows	Shell	29,707	25.0	742,664	0.0%	99.9%
Income Eligible	Other Lighting	Lighting	27,759	5.7	158,226	0.0%	99.9%
Income Eligible	Duct Insulation & Sealing	HVAC	27,461	20.0	549,222	0.0%	100.0%
Income Eligible	Rooftop Unit & Exhaust Fan	HVAC	17,363	15.9	275,741	0.0%	100.0%
Income Eligible	Pipe Insulation	Hot Water	16,642	17.6	292,839	0.0%	100.0%
Income Eligible	Bathroom Faucet Aerator	Hot Water	9,014	10.0	90,141	0.0%	100.0%
Income Eligible	Occupancy Sensor & Other Controls	Lighting	8,201	8.0	65,608	0.0%	100.0%
Income Eligible	Vending Miser	Refrigeration	8,065	5.0	40,324	0.0%	100.0%
Income Eligible	Roof Insulation or Replacement	Shell	6,049	10.0	60,490	0.0%	100.0%
Income Eligible	Water Heater	Hot Water	1,835	15.0	27,526	0.0%	100.0%
Income Eligible	Variable Speed Drive	HVAC	1,340	15.0	20,101	0.0%	100.0%
Income Eligible	Advanced Power Strips Tier 2	Consumer Electronics	432	7.0	3,024	0.0%	100.0%
Income Eligible	Water Heater Wrap	Hot Water	287	5.0	1,434	0.0%	100.0%
Income Eligible	Water Heater Temperature SetBack	Hot Water	82	2.0	163	0.0%	100.0%

* WAML shown here is an estimated gross lifetime savings divided by gross 1st year savings. This may not represent the actual WAML for measure types where savings are aggregated (e.g. heat pumps, interior and exterior LED fixtures).

Source: Evaluation team analysis