



# ComEd Food Bank-LED Distribution Program Impact Evaluation Report

Energy Efficiency / Demand Response Plan:  
Program Year 2020 (CY2020)  
(1/1/2020-12/31/2020)

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## 1. Introduction

This report presents results from the CY2020 impact evaluation of ComEd's Food Bank-LED Distribution Program. It summarizes the total energy and demand impacts for the program broken out by relevant measure and program structure details. The appendices provide the impact analysis methodology and details of the total resource cost (TRC) inputs. CY2020 covers January 1, 2020 through December 31, 2020.

## 2. Program Description

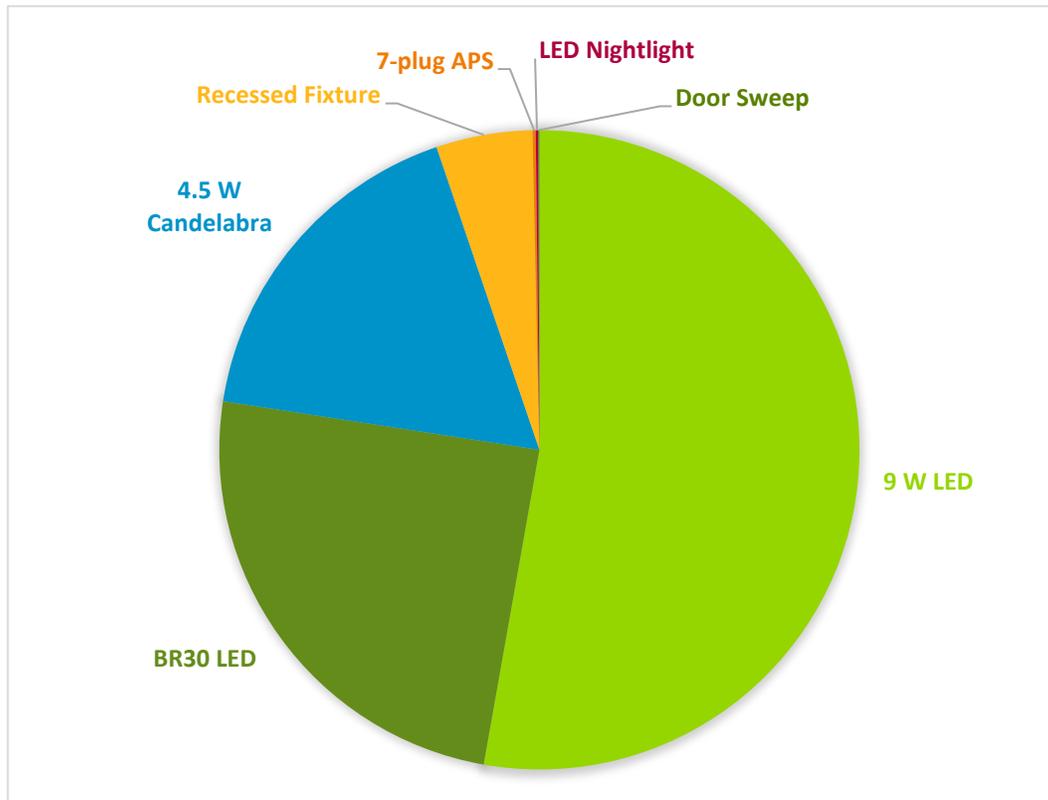
The Food Bank-LED Distribution Program provides packages of ENERGY STAR-certified LEDs, advanced power strips (APS), and weatherstripping to select Feeding America food banks and community organizations. The food banks use their network of local food pantries within ComEd's service territory to distribute the energy efficiency measures to utility customers. The program had 647 participating organizations in CY2020, and distributed 2,467,416 measures, as Table 2-1 and Figure 2-1 show.

**Table 2-1. CY2020 Volumetric Findings Detail**

Participation	Total Count
Participating Organizations	647
Number of 9 W LEDs Distributed	1,302,500
Number of BR30 LEDs Distributed	608,000
Number of 4.5 W Candelabra LEDs Distributed	428,416
Number of Recessed LED Fixtures Distributed	120,000
Number of APS Distributed	4,000
Number of LED Nightlights Distributed	3,000
Number of Door Sweeps Distributed	1,500
<b>Total Measures</b>	<b>2,467,416</b>

*Source: ComEd tracking data and evaluation team analysis*

**Figure 2-1. Share of Measures Installed by Type**



Source: ComEd tracking data and evaluation team analysis

### 3. Program Savings Detail

Table 3-1 summarizes the incremental energy and demand savings the Food Bank-LED Distribution Program achieved in CY2020. Gas savings are only those that ComEd may be able to claim, which excludes savings the gas utilities claim, either via joint or non-joint programs. Overall, the program has a CY2020 gross realization rate of 1.0.

**Table 3-1. CY2020 Total Annual Incremental Electric Savings**

Savings Category	Energy Savings (kWh)	Summer Peak* Demand Savings (kW)
<b>Electricity</b>		
Ex Ante Gross Savings†	90,670,123	10,863
Program Gross Realization Rate	1.00	1.00
Verified Gross Savings	90,669,565	10,857
Program Net-to-Gross Ratio (NTG)	1.00	1.00
CY2018 & CY2019 Net Carryover Savings	15,740,080	1,905
Verified Net Savings§	106,409,645	12,762
<b>Converted from Gas†</b>		
Ex Ante Gross Savings	NA	NA
Program Gross Realization Rate	NA	NA
Verified Gross Savings	245,692	NA
Program Net-to-Gross Ratio (NTG)	1.00	NA
Verified Net Savings	245,692	NA
<b>Total Electric Plus Gas</b>		
Ex Ante Gross Savings†	90,670,123	10,863
Program Gross Realization Rate	1.00	1.00
Verified Gross Savings	90,915,257	10,857
Program Net-to-Gross Ratio (NTG)	1.00	1.00
CY2018 & CY2019 Net Carryover Savings	15,740,080	1,905
Verified Net Savings§	106,655,337	12,762

NA = not applicable (refers to a piece of data that cannot be produced or does not apply)

\*The coincident summer peak period is defined as 1:00 p.m.-5:00 p.m. Central Prevailing Time on non-holiday weekdays, June through August.

† Gas savings converted to kilowatt-hours (kWh) by multiplying therms by 29.31 (which is based on 100,000 Btu/therm and 3,412 Btu/kWh). The evaluation determines which gas savings are converted to kWh and counted toward ComEd's electric savings goal while producing the portfolio-wide summary report. According to Section 8-103B(b-25) of the Illinois Public Utilities Act, "In no event shall more than 10% of each year's applicable annual incremental goal as defined in paragraph (7) of subsection (g) of this Section be met through savings of fuels other than electricity."

‡ Ex ante and verified gross savings exclude gross carryover savings from CY2018 and CY2019 bulb sales.

§ Verified net savings includes net carryover savings from CY2018 and CY2019.

Source: ComEd tracking data and evaluation team analysis

## 4. Cumulative Persisting Annual Savings

Table 4-1 to Table 4-3 and Figure 4-1 show the measure-specific and total verified gross savings for the Food Bank-LED Distribution Program and the cumulative persisting annual savings (CPAS) for the measures installed in CY2020. Figure 4-1 shows the savings across the useful life of the measures. The electric CPAS across all measures installed in 2020 is 106,409,645 kWh (Table 4-1). The CY2020 gas contribution to CPAS (converted to equivalent electricity) is 245,692 kWh (Table 4-2). Adding the gas and electric contributions produces 106,655,337 kWh of total CY2020 contribution to CPAS (Table 4-3). The historic rows in each table are the CPAS contribution back to CY2018. The Program Total Electric CPAS and the Program Total Gas CPAS rows are the sum of the CY2020 contribution and the historic contribution.

The ex ante savings did not include an estimate for carryover savings from light bulbs that were distributed in CY2018 and CY2019 but were installed in CY2020. The Guidehouse team included carryover for CY2018 and CY2019 into CY2020 in Table 4-1 through Table 4-3.

**Table 4-1. Cumulative Persisting Annual Savings (CPAS) – Electric**

End Use Type	Research Category	EUL	CY2020 Verified Gross Savings (kWh)	NTG*	Lifetime Net Savings (kWh)†	Verified Net kWh Savings									
						2018	2019	2020	2021	2022	2023	2024	2025	2026	
Lighting	9 W LED	10.0	42,970,462	1.00	374,272,720		42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	
Lighting	BR30 LED	10.0	29,364,467	1.00	264,573,851		29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	
Lighting	4.5 W Candelabra	10.0	12,886,582	1.00	110,695,736		12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	
Lighting	Recessed Fixture	10.0	4,982,198	1.00	42,797,084		4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	
Consumer Electronics	7-plug APS	7.0	374,920	1.00	2,624,440		374,920	374,920	374,920	374,920	374,920	374,920	374,920	374,920	
Lighting	LED Nightlight	8.0	70,842	1.00	566,736		70,842	70,842	70,842	70,842	70,842	70,842	70,842	70,842	
HVAC	Door Sweep	20.0	20,094	1.00	401,880		20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	
Lighting	CY2018 & CY2019 Carryover	10.0	15,740,080	1.00	137,015,327		15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	
CY2020 Program Total Electric Contribution to CPAS			106,409,645		932,947,775		106,409,645	106,409,645	106,409,645	106,409,645	106,409,645	106,409,645	106,409,645	106,409,645	
Historic Program Total Electric Contribution to CPAS‡						39,753,102	116,517,078	116,517,078	38,482,724	38,482,724	38,482,724	33,983,186	33,194,187	33,193,051	
Program Total Electric CPAS						39,753,102	116,517,078	222,926,723	144,892,369	144,892,369	144,892,369	140,392,831	139,603,832	139,602,697	
CY2020 Program Incremental Expiring Electric Savings§									-	-	-	-	-	-	
Historic Program Incremental Expiring Electric Savings‡§								-	78,034,354	-	-	4,499,538	788,999	1,136	
Program Total Incremental Expiring Electric Savings§								-	78,034,354	-	-	4,499,538	788,999	1,136	

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Lighting	9 W LED	24,493,163	24,493,163	24,493,163									
Lighting	BR30 LED	19,674,193	19,674,193	19,674,193									
Lighting	4.5 W Candelabra	6,829,888	6,829,888	6,829,888									
Lighting	Recessed Fixture	2,640,565	2,640,565	2,640,565									
Consumer Electronics	7-plug APS												
Lighting	LED Nightlight	70,842											
HVAC	Door Sweep	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094
Lighting	CY2018 & CY2019 Carryover	8,944,921	8,944,921	8,944,921									
CY2020 Program Total Electric Contribution to CPAS		62,673,667	62,602,825	62,602,825	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094
Historic Program Total Electric Contribution to CPAS‡		33,193,051	21,974,885										
Program Total Electric CPAS		95,866,718	84,577,710	62,602,825	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094	20,094
CY2020 Program Incremental Expiring Electric Savings§		43,735,979	70,842	-	62,582,731	-	-	-	-	-	-	-	-
Historic Program Incremental Expiring Electric Savings‡§		-	11,218,166	21,974,885	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Electric Savings§		43,735,979	11,289,008	21,974,885	62,582,731	-	-	-	-	-	-	-	-

End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Lighting	9 W LED												
Lighting	BR30 LED												
Lighting	4.5 W Candelabra												
Lighting	Recessed Fixture												
Consumer Electronics	7-plug APS												
Lighting	LED Nightlight												
HVAC	Door Sweep	20,094											
Lighting	CY2018 & CY2019 Carryover												
CY2020 Program Total Electric Contribution to CPAS		20,094	-	-	-	-	-	-	-	-	-	-	-
Historic Program Total Electric Contribution to CPAS†													
Program Total Electric CPAS		20,094	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Incremental Expiring Electric Savings§		-	20,094	-	-	-	-	-	-	-	-	-	-
Historic Program Incremental Expiring Electric Savings‡§		-	-	-	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Electric Savings§		-	20,094	-	-	-	-	-	-	-	-	-	-

Note: The green highlighted cell shows program total first-year electric savings. The gray cells are blank, indicating no values or no contribution to calculating CPAS in CY2020.

\* A deemed value. Source found on the Illinois Stakeholder Advisory Group (SAG) website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

† Lifetime savings are the sum of CPAS savings through the effective useful life (EUL).

‡ Historic savings go back to CY2018.

§ Incremental expiring savings are equal to  $CPAS_{Y_{n-1}} - CPAS_{Y_n}$ .

Source: Evaluation team analysis

**Table 4-2. Cumulative Persisting Annual Savings (CPAS) – Gas**

End Use Type	Research Category	EUL	CY2020 Verified Gross Savings (Therms)	NTG*	Lifetime Net Savings (Therms)†	Verified Net Therms Savings												
						2018	2019	2020	2021	2022	2023	2024	2025	2026				
Lighting	9 WLED	10.0	-	1.00	-													
Lighting	BR30 LED	10.0	-	1.00	-													
Lighting	4.5 W Candelabra	10.0	-	1.00	-													
Lighting	Recessed Fixture	10.0	-	1.00	-													
Consumer Electronics	7-plug APS	7.0	-	1.00	-													
Lighting	LED Nightlight	8.0	-	1.00	-													
HVAC	Door Sweep	20.0	8,383	1.00	167,650			8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383		
Lighting	CY2018 & CY2019 Carryover	10.0	-	1.00	-													
CY2020 Program Total Gas Contribution to CPAS (Therms)			8,383		167,650			8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383		
CY2020 Program Total Gas Contribution to CPAS (kWh Equivalent)‡								245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692		
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)‡§																		
Program Total Gas CPAS (kWh Equivalent)‡																		
CY2020 Program Incremental Expiring Gas Savings (Therms)																		
CY2020 Program Incremental Expiring Gas Savings (kWh Equivalent)‡																		
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)‡§																		
Program Total Incremental Expiring Gas Savings (kWh Equivalent)‡																		

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Lighting	BR30 LED	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	4.5 W Candelabra	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	Recessed Fixture	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	7-plug APS	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	LED Nightlight	-	-	-	-	-	-	-	-	-	-	-	-
HVAC	Door Sweep	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383
Lighting	CY2018 & CY2019 Carryover	-	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Total Gas Contribution to CPAS (Therms)		8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383	8,383
CY2020 Program Total Gas Contribution to CPAS (kWh Equivalent)‡		245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)‡§													
Program Total Gas CPAS (kWh Equivalent)‡		245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692	245,692
CY2020 Program Incremental Expiring Gas Savings (Therms)		-	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Incremental Expiring Gas Savings (kWh Equivalent)‡		-	-	-	-	-	-	-	-	-	-	-	-
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)‡§		-	-	-	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Gas Savings (kWh Equivalent)‡		-	-	-	-	-	-	-	-	-	-	-	-

End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Lighting	9 W LED	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	BR30 LED	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	4.5 W Candelabra	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	Recessed Fixture	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	7-plug APS	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	LED Nightlight	-	-	-	-	-	-	-	-	-	-	-	-
HVAC	Door Sweep	8,383	-	-	-	-	-	-	-	-	-	-	-
Lighting	CY2018 & CY2019 Carryover	-	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Total Gas Contribution to CPAS (Therms)		8,383	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Total Gas Contribution to CPAS (kWh Equivalent)†		245,692	-	-	-	-	-	-	-	-	-	-	-
Historic Program Total Gas Contribution to CPAS (kWh Equivalent)†§		-	-	-	-	-	-	-	-	-	-	-	-
Program Total Gas CPAS (kWh Equivalent)†		245,692	-	-	-	-	-	-	-	-	-	-	-
CY2020 Program Incremental Expiring Gas Savings (Therms)		-	8,383	-	-	-	-	-	-	-	-	-	-
CY2020 Program Incremental Expiring Gas Savings (kWh Equivalent)†		-	245,692	-	-	-	-	-	-	-	-	-	-
Historic Program Incremental Expiring Gas Savings (kWh Equivalent)†§		-	-	-	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Gas Savings (kWh Equivalent)†		-	245,692	-	-	-	-	-	-	-	-	-	-

Note: The green highlighted cell shows program total first-year gas savings in kWh equivalents. The gray cells are blank, indicating no values or no contribution to calculating CPAS in CY2020.

\* A deemed value. Source: is to be found on the IL SAG web site here: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

† 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 Y<sub>n-1</sub> - CPAS Y<sub>n</sub>.

Source: Evaluation team analysis

**Table 4-3. Cumulative Persisting Annual Savings (CPAS) – Total**

End Use Type	Research Category	EUL	CY2020 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		
Lighting	9 W LED	10.0	42,970,462	1.00	374,272,720			42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	42,970,462	
Lighting	BR30 LED	10.0	29,364,467	1.00	264,573,851			29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	29,364,467	
Lighting	4.5 W Candelabra	10.0	12,886,582	1.00	110,695,736			12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	12,886,582	
Lighting	Recessed Fixture	10.0	4,982,198	1.00	42,797,084			4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	4,982,198	
Consumer Electronics	7-plug APS	7.0	374,920	1.00	2,624,440			374,920	374,920	374,920	374,920	374,920	374,920	374,920	374,920	
Lighting	LED Nightlight	8.0	70,842	1.00	566,736			70,842	70,842	70,842	70,842	70,842	70,842	70,842	70,842	
HVAC	Door Sweep	20.0	265,786	1.00	5,315,711			265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	
Lighting	CY2018 & CY2019 Carryover	10.0	15,740,080	1.00	137,015,327			15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	15,740,080	
CY2020 Program Total Contribution to CPAS			106,655,337		937,861,606			106,655,337	106,655,337	106,655,337	106,655,337	106,655,337	106,655,337	106,655,337	106,655,337	
Historic Program Total Contribution to CPAS‡						39,753,102	116,517,078	116,517,078	38,482,724	38,482,724	38,482,724	33,983,186	33,194,187	33,193,051		
Program Total CPAS						39,753,102	116,517,078	223,172,415	145,138,061	145,138,061	145,138,061	140,638,523	139,849,524	139,848,388		
CY2020 Program Incremental Expiring Savings§									-	-	-	-	-	-		
Historic Program Incremental Expiring Savings‡§									-	-	-	4,499,538	788,999	1,136		
Program Total Incremental Expiring Savings§									-	-	-	4,499,538	788,999	1,136		

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Lighting	9 W LED	24,493,163	24,493,163	24,493,163	-	-	-	-	-	-	-	-	-
Lighting	BR30 LED	19,674,193	19,674,193	19,674,193	-	-	-	-	-	-	-	-	-
Lighting	4.5 W Candelabra	6,829,888	6,829,888	6,829,888	-	-	-	-	-	-	-	-	-
Lighting	Recessed Fixture	2,640,565	2,640,565	2,640,565	-	-	-	-	-	-	-	-	-
Consumer Electronics	7-plug APS	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	LED Nightlight	70,842	-	-	-	-	-	-	-	-	-	-	-
HVAC	Door Sweep	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786
Lighting	CY2018 & CY2019 Carryover	8,944,921	8,944,921	8,944,921	-	-	-	-	-	-	-	-	-
CY2020 Program Total Contribution to CPAS		62,919,358	62,848,516	62,848,516	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786
Historic Program Total Contribution to CPAS‡		33,193,051	21,974,885	-	-	-	-	-	-	-	-	-	-
Program Total CPAS		96,112,410	84,823,402	62,848,516	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786	265,786
CY2020 Program Incremental Expiring Savings§		43,735,979	70,842	-	62,582,731	-	-	-	-	-	-	-	-
Historic Program Incremental Expiring Savings‡§		-	11,218,166	21,974,885	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Savings§		43,735,979	11,289,008	21,974,885	62,582,731	-	-	-	-	-	-	-	-

End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Lighting	9 W LED	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	BR30 LED	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	4.5 W Candelabra	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	Recessed Fixture	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	7-plug APS	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	LED Nightlight	-	-	-	-	-	-	-	-	-	-	-	-
HVAC	Door Sweep	265,786	-	-	-	-	-	-	-	-	-	-	-
Lighting	CY2018 & CY2019 Carryover	-	-	-	-	-	-	-	-	-	-	-	-
<b>CY2020 Program Total Contribution to CPAS</b>		<b>265,786</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Historic Program Total Contribution to CPAS†</b>		-	-	-	-	-	-	-	-	-	-	-	-
<b>Program Total CPAS</b>		<b>265,786</b>	-	-	-	-	-	-	-	-	-	-	-
<b>CY2020 Program Incremental Expiring Savings§</b>		-	<b>265,786</b>	-	-	-	-	-	-	-	-	-	-
<b>Historic Program Incremental Expiring Savings†§</b>		-	-	-	-	-	-	-	-	-	-	-	-
<b>Program Total Incremental Expiring Savings§</b>		-	<b>265,786</b>	-	-	-	-	-	-	-	-	-	-

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 no contribution to calculating CPAS in CY2020.

\* A deemed value. Source: is to be found on the IL SAG web site here: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

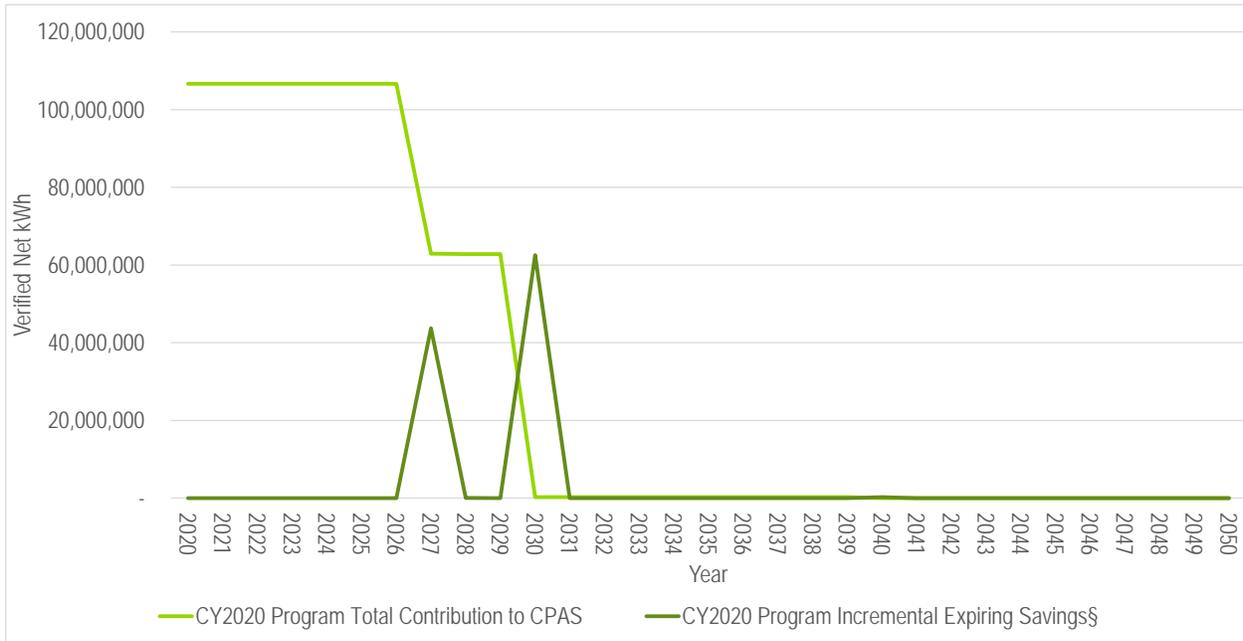
† Lifetime savings are the sum of CPAS savings through the EUL.

‡ Historic savings go back to CY2018.

§ Incremental expiring savings are equal to  $CPAS_{Y_{n-1}} - CPAS_{Y_n}$

Source: *Evaluation team analysis*

**Figure 4-1. Cumulative Persisting Annual Savings**



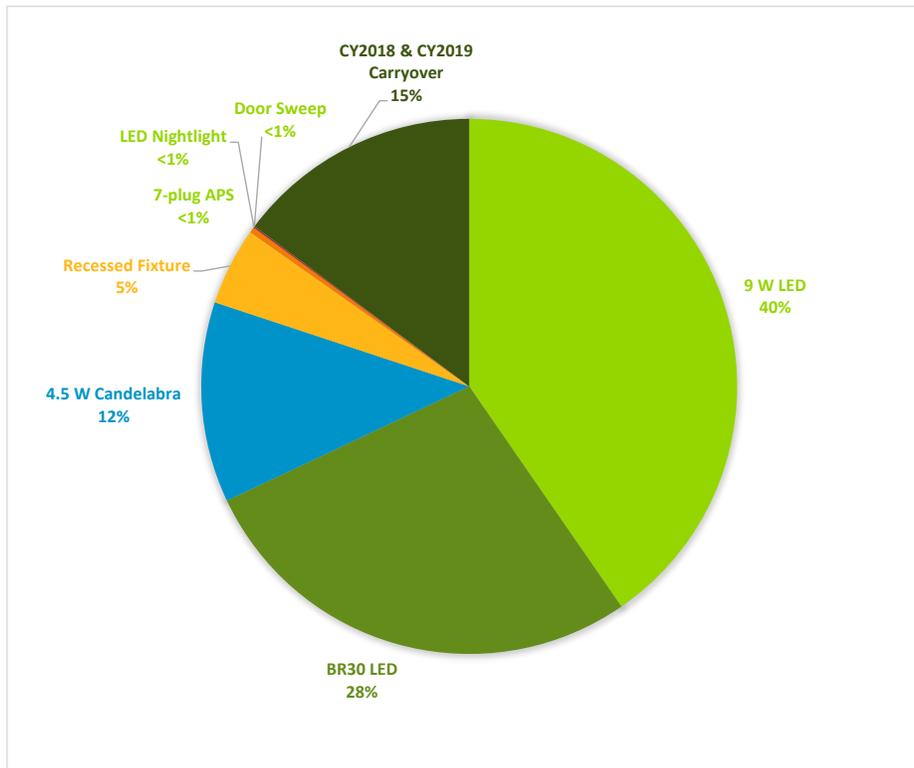
§Expiring savings are equal to CPAS Yn-1 - CPAS Yn

Source: Evaluation team analysis

## 5. Program Savings by Measure

The program includes seven measures, as the following tables show. The 9 W LED and BR30 LED measures contributed the most savings (see Figure 5-1). There is also carryover from deferred installations of lamps distributed in CY2018 and CY2019. Total ex ante savings from the program did not include carryover savings. The door sweep measure achieved 8,383 first-year therms savings, however the therms were not reported in program tracking data.

**Figure 5-1. Verified Net Savings by Measure – Electric**



Source: Evaluation team analysis

**Table 5-1. CY2020 Energy Savings by Measure – Electric**

End Use Type	Research Category	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)	EUL (years)
Lighting	9 W LED	42,970,777	1.00	42,970,462	1.00	42,970,462	10.0
Lighting	BR30 LED	29,364,576	1.00	29,364,467	1.00	29,364,467	10.0
Lighting	4.5 W Candelabra	12,886,753	1.00	12,886,582	1.00	12,886,582	10.0
Lighting	Recessed Fixture	4,982,160	1.00	4,982,198	1.00	4,982,198	10.0
Consumer Electronics	7-plug APS	374,920	1.00	374,920	1.00	374,920	7.0
Lighting	LED Nightlight	70,842	1.00	70,842	1.00	70,842	8.0
HVAC	Door Sweep	20,094	1.00	20,094	1.00	20,094	20.0
Lighting	CY2018 & CY2019 Carryover	NR	NA	15,740,080	1.00	15,740,080	10.0
	<b>Total</b>	<b>90,670,123</b>	<b>1.17§</b>	<b>106,409,645</b>	<b>1.00</b>	<b>106,409,645</b>	<b>10.0</b>

Note: The savings in this table include secondary electric energy (kWh) savings from water supply and wastewater treatment plants for measures claimed by ComEd. The savings account for electric heating penalties, where applicable.

\*A deemed value. Source found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

§ The overall program realization rate includes verified gross carryover savings in the program savings totals. The overall program realization rate excluding verified carryover savings is 1.00.

Source: ComEd tracking data and evaluation team analysis

**Table 5-2. CY2020 Summer Peak Demand Savings by Measure**

End Use Type	Research Category	Ex Ante Gross Peak Demand Reduction (kW)	Verified Gross Realization Rate	Verified Gross Peak Demand Reduction (kW)	NTG*	Verified Net Peak Demand Reduction (kW)
Lighting	9 WLED	5,210.00	1.00	5,205.20	1.00	5,205.20
Lighting	BR30 LED	3,489.92	1.00	3,487.42	1.00	3,487.42
Lighting	4.5 W Candelabra	1,529.45	1.00	1,530.45	1.00	1,530.45
Lighting	Recessed Fixture	591.60	1.00	591.70	1.00	591.70
Consumer Electronics	7-plug APS	42.08	1.00	42.07	1.00	42.07
Lighting	LED Nightlight	0.00	NA	0.00	1.00	0.00
HVAC	Door Sweep	0.00	NA	0.00	1.00	0.00
Lighting	CY2018 & CY2019 Carryover	NR	NA	1,905.07	1.00	1,905.07
<b>Total</b>		<b>10,863.05</b>	<b>1.17§</b>	<b>12,761.93</b>	<b>1.00</b>	<b>12,761.93</b>

\*A deemed value. Source found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

§ The overall program realization rate includes verified gross carryover savings in the program savings totals. The overall program realization rate excluding verified carryover savings is 1.00.

Source: ComEd tracking data and evaluation team analysis

**Table 5-3. CY2020 Energy Savings by Measure – Gas**

End Use Type	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate	Verified Gross Savings (Therms)	NTG*	Verified Net Savings (Therms)	EUL (years)
Lighting	9 WLED	0	NA	0	1.00	0	10.0
Lighting	BR30 LED	0	NA	0	1.00	0	10.0
Lighting	4.5 W Candelabra	0	NA	0	1.00	0	10.0
Lighting	Recessed Fixture	0	NA	0	1.00	0	10.0
Consumer Electronics	7-plug APS	0	NA	0	1.00	0	7.0
Lighting	LED Nightlight	0	NA	0	1.00	0	8.0
HVAC	Door Sweep	0	NA	8,383	1.00	8,383	20.0
Lighting	CY2018 & CY2019 Carryover	0	NA	0	1.00	0	10.0
<b>Total Therms</b>		<b>0</b>	<b>NA</b>	<b>8,383</b>	<b>NA</b>	<b>8,383</b>	<b>NA</b>
<b>Total kWh Converted From Therms</b>		<b>0</b>	<b>NA</b>	<b>245,692</b>	<b>NA</b>	<b>245,692</b>	<b>NA</b>

\*A deemed value. Source found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

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

Source: ComEd tracking data and evaluation team analysis

**Table 5-4. CY2020 Energy Savings by Measure – Total Combining Electricity and Gas**

End Use Type	Research Category	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)
Lighting	9 W LED	42,970,777	1.00	42,970,462	1.00	42,970,462
Lighting	BR30 LED	29,364,576	1.00	29,364,467	1.00	29,364,467
Lighting	4.5 W Candelabra	12,886,753	1.00	12,886,582	1.00	12,886,582
Lighting	Recessed Fixture	4,982,160	1.00	4,982,198	1.00	4,982,198
Consumer Electronics	7-plug APS	374,920	1.00	374,920	1.00	374,920
Lighting	LED Nightlight	70,842	1.00	70,842	1.00	70,842
HVAC	Door Sweep	20,094	1.00	265,786	1.00	265,786
Lighting	CY2018 & CY2019 Carryover	NR	NA	15,740,080	1.00	15,740,080
	<b>Total†</b>	<b>90,670,123</b>	<b>1.18§</b>	<b>106,655,337</b>	<b>1.00</b>	<b>106,655,337</b>

\*A deemed value. Source found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

† The total includes the electric equivalent of the total therms.

§ The overall program realization rate includes verified gross carryover savings in the program savings totals. The overall program realization rate excluding verified carryover savings is 1.00.

Source: ComEd tracking data and evaluation team analysis

## 6. Impact Analysis Findings and Recommendations

### 6.1 Impact Parameter Estimates

The evaluation follows the methodology provided in the Illinois Statewide Technical Reference Manual v8.0 (TRM v8.0). The evaluation team estimated the lifetime energy and demand savings by multiplying the verified savings by the EUL for each measure. The evaluation team also applied midlife baseline adjustments to the lifetime savings calculations for lighting measures following TRM v8.0 methodology. Table 6-1 through Table 6-5 present key parameters and references used in the verified gross and net savings calculations, indicating which were examined through CY2020 evaluation research and which were deemed.

**Table 6-1. 9 W Omnidirectional LED Savings Parameters**

Gross Savings Input Parameters	Value	Units	Deemed or Evaluated?	Source*
Quantity	1,302,500	No. of lamps	Evaluated	Program Tracking Data
Watts Base	43	W	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
Watts EE	9	W	Evaluated	Technical Specs
ISR	80.3%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
Leakage	0.08%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
Hours	1,159	Hours/year	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
WHe	1.051	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
WHd	1.093	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
CF	0.135	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
HF	0.42	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
nHeat - gas	0.7	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
Midlife Baseline Adjustment	57%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
EUL	10	Years	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8

\*TRM is the Illinois Statewide Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>. The NTG values can be found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

Source: Evaluation team analysis

**Table 6-2. LED Specialty Lamps Savings Parameters**

Gross Savings Input Parameters	BR30 Value	Candelabra Value	Fixture Value	Units	Deemed or Evaluated?	Source*
Quantity	608,000	428,416	120,000	No. of lamps	Evaluated	Program Tracking Data
Watts Base	65	40	60	W	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
Watts EE	8	4.5	11	W	Evaluated	Technical Specs
ISR	80.3%	80.3%	80.3%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.8
Leakage	1.1%	1.1%	1.1%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
Hours	1,020	1,020	1,020	Hours/year	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
WHe	1.046	1.046	1.046	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
WHd	1.083	1.083	1.083	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
CF	0.117	0.117	0.117	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
HF	0.42	0.42	0.42	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
nHeat - gas	0.7	0.7	0.7	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
Midlife Baseline Adjustment	67%	53%	53%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
EUL	10	10	10	Years	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6

\*TRM is the Illinois Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>. The NTG values can be found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

Source: Evaluation team analysis

**Table 6-3. LED Nightlight Savings Parameters**

Gross Savings Input Parameters	Value	Units	Deemed or Evaluated?	Source*
Quantity	3,000	No. of lamps	Evaluated	Program Tracking Data
Watts Base	7	W	Deemed	TRM v8.0 – Section 5.5.11
Watts EE	0.5	W	Evaluated	Technical Specs
ISR	80.3%	-	Deemed	TRM v8.0 – Errata Sept. 25, 2020 – Section 5.5.6
Leakage	2%	-	Deemed	TRM v8.0 – Section 5.5.11
Hours	4,380	Hours/year	Deemed	TRM v8.0 – Section 5.5.11
WHe	1.054	-	Deemed	TRM v8.0 – Section 5.5.11
WHd	1.098	-	Deemed	TRM v8.0 – Section 5.5.11
CF	0	-	Deemed	TRM v8.0 – Section 5.5.11
HF	0.49	-	Deemed	TRM v8.0 – Section 5.5.11
nHeat - gas	0.7	-	Deemed	TRM v8.0 – Section 5.5.11
EUL	8	Years	Deemed	TRM v8.0 – Section 5.5.11

\*TRM is the Illinois Statewide Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>. The NTG values can be found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

Source: Evaluation team analysis

**Table 6-4. APS Savings Parameters**

Gross Savings Input Parameters	Value	Units	Deemed or Evaluated?	Source *
Quantity	4,000	No. of measures	Evaluated	Program Tracking Data
Number of Plugs	7	-	Evaluated	Technical Specs
Delta kWh	103	kWh/year/unit	Deemed	TRM v8.0 – Section 5.2.1
ISR	91%	-	Deemed	TRM v8.0 – Section 5.2.1
Hours	7,129	Hours/year	Deemed	TRM v8.0 – Section 5.2.1
CF	0.8	-	Deemed	TRM v8.0 – Section 5.2.1
EUL	7	Years	Deemed	TRM v8.0 – Section 5.2.1

\*TRM is the Illinois Statewide Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>. The NTG values can be found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

Source: Evaluation team analysis

**Table 6-5. Door Sweep Savings Parameters**

Gross Savings Input Parameters	Value	Units	Deemed or Evaluated?	Source*
Quantity	1,500	No. of measures	Evaluated	Program Tracking Data
Delta kWh	148.055	kWh/year/unit	Evaluated	TRM v8.0 – Section 5.6.1 (Methodology 2)
nSweep	1	-	Evaluated	TRM v8.0 – Section 5.6.1 (Methodology 2)
ADJRxAirsealing	80%	-	Deemed	TRM v8.0 – Section 5.6.1 (Methodology 2)
ISR	87%	-	Deemed	TRM v8.0 – Section 5.6.1 (Methodology 2)
%ElectricHeat	13%	-	Deemed	TRM v8.0 – Section 5.6.1 (Methodology 2)
Delta therms	9.23	therms/year/unit	Evaluated	TRM v8.0 – Section 5.6.1 (Methodology 2)
EUL	20	Years	Deemed	TRM v8.0 – Section 5.2.1

\*TRM is the Illinois Statewide Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>. The NTG values can be found on the Illinois SAG website: [https://www.ilsag.info/ntg\\_2020](https://www.ilsag.info/ntg_2020).

Source: Evaluation team analysis

## 6.2 CY2021 Carryover Savings Estimates

The CY2021 carryover estimate calculation relies on the TRM v9.0 and the CY2019 and CY2020 reports. All of these data sources are available, so it is possible to estimate the gross and net carryover energy savings the evaluation team recommends for CY2021. The energy and demand savings from these CY2019 and CY2020 deferred installs are calculated based on the following parameters:

- **Delta watts:** Calculated for the installation year (source: TRM v9.0, CY2020 program data).
- **Hours of use (HOU) and peak coincidence factor (CF):** TRM deemed value from the installation year (source: TRM v9.0).
- **Energy and demand interactive effects:** TRM deemed value from the installation year (source: TRM v9.0.)
- **Installation rate:** TRM deemed value from the purchase year (source: TRM v8.0, TRM v9.0).
- **NTG:** Evaluation research from the purchase year (source: impact evaluation reports).

Table 6-6 shows that 388,613 bulbs purchased during either CY2019 or CY2020 are expected to be installed in CY2021 within ComEd's service territory. The table provides both the gross and net energy and demand savings from these bulbs. The total net energy and peak demand savings are estimated to be 16,993,324 kWh and 2,043 kW, respectively. These will be counted in CY2021 as Food Bank-LED Distribution Program carryover savings.

**Table 6-6. CY2021 Verified Savings Carryover Estimate**

CY2021 Verified Savings Carryover Estimate	CY2019 Bulbs	CY2020 Bulbs	Carryover in CY2021
Carryover Bulbs Installed During CY2021	152,269	236,344	388,613
Average Delta Watts	34.151	40.639	38.097
Average Annual Hours of Use	1,145	1,098	1,116
Average Energy Interactive Effects	1.050	1.049	1.049
Average Demand Interactive Effects	1.092	1.088	1.090
Summer Peak Load Coincidence Factor	0.133	0.126	0.129
Carryover Gross Energy Savings (kWh)	6,200,849	10,792,474	16,993,324
Carryover Gross Demand Savings (kW)	5,631	10,350	15,980
Carryover Gross Summer Peak Demand Savings (kW)	750	1,294	2,043
Net-to-Gross Ratio	1.00	1.00	1.00
Carryover Net Energy Savings (kWh)	6,200,849	10,792,474	16,993,324
Carryover Net Demand Savings (kW)	5,631	10,350	15,980
Carryover Net Summer Peak Demand Savings (kW)	750	1,294	2,043
Average Effective Useful Life	10.0	10.0	10.0

Source: Evaluation team analysis

### 6.3 Other Impact Findings and Recommendations

The evaluation team developed one recommendation based on findings from the CY2020 evaluation.

**Finding 1.** The ex ante savings do not include therm savings from the door sweep measures. The program achieved 5.59 therms of first-year savings for each door sweep distributed in CY2020, totaling 8,383 net therms. These therms resulted in 245,692 net kWh of electric equivalent energy savings from converted therms, representing <1% of the total verified net savings.

**Recommendation 1.** Guidehouse recommends that ComEd and the implementer track and report therm savings for door sweep measures during CY2021.

## Appendix A. Impact Analysis Methodology

The evaluation team determined verified gross savings for each program measure by:

- Reviewing the savings algorithm inputs in the measure workbook for agreement with the TRM v8.0 and Errata.
- Validating savings algorithms were applied correctly.
- Cross-checking per-unit savings values in the tracking data with the verified values in the measure workbook or in the team's calculations if the workbook did not agree with the TRM v8.0.
- Multiplying the verified per-unit savings value by the quantity reported in the tracking data.

The team calculated verified net energy and demand (coincident peak and overall) savings by multiplying the verified gross savings estimates by a NTG ratio of 1.0. For CY2020, the Food Bank-LED Distribution Program's NTG estimate was defined by a consensus process through the Illinois SAG.

## Appendix B. Total Resource Cost Detail

Table B-1 shows the TRC cost-effectiveness analysis inputs available at the time of finalizing this impact evaluation report. Additional required cost data (e.g., measure costs, program-level incentive and non-incentive costs) is not included in this table and will be provided to the evaluation team later.

**Table B-1. Total Resource Cost Savings Summary**

End Use Type	Research Category	Units	Quantity	EUL (years)*	ER Flag †	Gross Electric Energy Savings (kWh)	Gross Peak Demand Reduction (kW)	Gross Gas Savings (Therms)	Gross Secondary Savings due to Water Reduction (kWh)	Gross Heating Penalty (kWh)	Gross Heating Penalty (Therms)	NTG (kWh)	NTG (kW)	NTG (Therms)	Net Electric Energy Savings (kWh)	Net Peak Demand Reduction (kW)	Net Gas Savings (Therms)	Net Secondary Savings due to Water Reduction (kWh)	Net Heating Penalty (kWh)	Net Heating Penalty (Therms)
Lighting	9 W LED	Lamp	1,302,500	10.0	No	42,970,462	5,205.20	0	0	-837,004	1.00	1.00	1.00	42,970,462	5,205.20	0	0	0	-837,004	
Lighting	BR30 LED	Lamp	608,000	10.0	No	29,364,467	3,487.42	0	0	-574,713	1.00	1.00	1.00	29,364,467	3,487.42	0	0	0	-574,713	
Lighting	4.5 W Candelebra	Lamp	428,416	10.0	No	12,886,582	1,530.45	0	0	-252,212	1.00	1.00	1.00	12,886,582	1,530.45	0	0	0	-252,212	
Lighting	Recessed Fixture	Lamp	120,000	10.0	No	4,982,198	591.70	0	0	-97,510	1.00	1.00	1.00	4,982,198	591.70	0	0	0	-97,510	
Consumer Electronics	7-plug APS	Each	4,000	7.0	No	374,920	42.07	0	0	0	1.00	1.00	1.00	374,920	42.07	0	0	0	0	
Lighting	LED Nightlight	Lamp	3,000	8.0	No	70,842	0.00	0	0	-1,605	1.00	1.00	1.00	70,842	0.00	0	0	0	-1,605	
HVAC	Door Sweep	Each	1,500	20.0	No	20,094	0.00	8,383	0	0	1.00	1.00	1.00	20,094	0.00	8,383	0	0	0	
Lighting	CY2018 & CY2019 Carryover	Lamp	384,497	10.0	No	15,740,080	1,905.07	0	0	-282,391	1.00	1.00	1.00	15,740,080	1,905.07	0	0	0	-282,391	
<b>Total</b>				<b>10.0</b>		<b>106,409,645</b>	<b>12,762</b>	<b>8,383</b>	<b>0</b>	<b>0</b>	<b>-2,045,435</b>	<b>1.00</b>	<b>1.00</b>	<b>NA</b>	<b>106,409,645</b>	<b>12,762</b>	<b>8,383</b>	<b>0</b>	<b>0</b>	<b>-2,045,435</b>

Note: To avoid double counting, the verified gross kWh and net kWh used in the TRC analysis exclude secondary energy savings from water reduction measures. The program saved 0 gallons of water representing 0 gross kWh and 0 net kWh.

\*The total of the EUL column is the weighted average measure life (WAML) and is calculated as the sum product of EUL and measure savings divided by total program savings.

† Early replacement (ER) measures are flagged as YES; otherwise a NO is indicated in the column.

Source: ComEd tracking data and evaluation team analysis