Guidehouse

ComEd Business Grocery Impact Evaluation Report

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

Presented to
ComEd

FINAL

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ComEd Business Grocery Impact Evaluation Report

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1. Introduction

This report presents the results of the impact evaluation of ComEd's CY2019 Business Grocery (Grocery) Program. It includes a summary of the energy and demand impacts for the total program broken out by relevant measure and program structure details. The appendix provides the impact analysis methodology and details of the Total Resource Cost inputs. CY2019 covers January 1, 2019 through December 31, 2019.

2. Program Description

The ComEd Grocery Program aims to achieve cost-effective electricity savings for grocery and retail customers with refrigeration systems. The offering provides an account manager working with the customer through an initial energy assessment, equipment/measure selection and installation, incentive application and approval, and re-engagement to identify additional energy savings opportunities. The offering engages with manufacturers, distributors, and installers of refrigeration and lighting equipment to offer the measures listed in Table 2-1 below.

To participate in the program, the ComEd customer must first undergo a no-cost energy assessment or pre-installation check and an interview completed by the offering implementer, CLEAResult. CLEAResult prepares a savings report based on the findings of the assessment and a CLEAResult account manager discusses the report with the customer. The savings report is generated using an energy savings model and measure analysis tool developed by CLEAResult called GrocerSmart. Each customer report presents possible efficiency measures for the customer to consider. Once the customer selects the measures to install, the account manager helps the customer select installers, complete incentive processing paperwork, and manage the projects to completion. Account managers will re-engage with customers after project completion to identify additional opportunities, providing the same level of management and assistance for subsequent projects the customer decides to undertake.

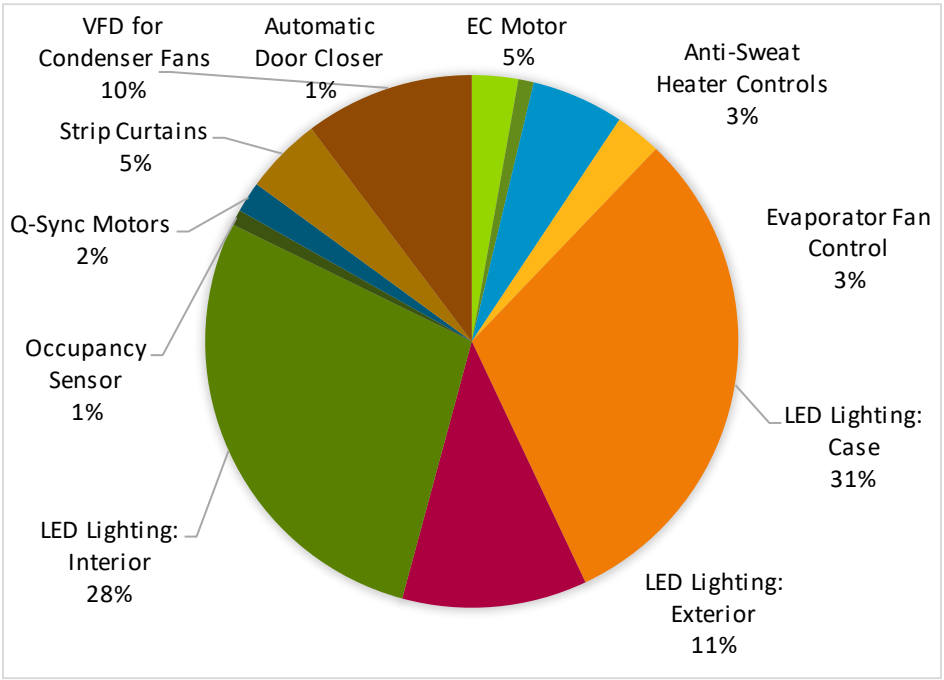
In CY2019, the Grocery Program had 49 participants and distributed 107 measures as shown in the following table and graph. Figure 2-1 illustrates the program volume distribution according to the 11 primary measure types; Figure 2-2 illustrates the program distribution according to the three end use types. In its first year, the Grocery Program's measure distribution was 73% lighting or lighting controls; and 27% refrigeration.

Table 2-1. CY2019 Volumetric Findings Detail

Participation	End Use	Number
Participants		49
Installed Projects		107
Research Measure Types		11
Research End Use Types		3
Installed Anti-Sweat Heater Controls	Refrigeration	3
Installed Automatic Door Closer	Refrigeration	1
Installed EC Motor	Refrigeration	6
Installed Evaporator Fan Control	Refrigeration	3
Installed LED Lighting: Case	Lighting	33
Installed LED Lighting: Exterior	Lighting	12
Installed LED Lighting: Interior	Lighting	30
Installed Occupancy Sensor	Lighting Controls	1
Installed Q-Sync Motors	Refrigeration	2
Installed Strip Curtains	Refrigeration	5
Installed VFD for Condenser Fans	Refrigeration	11

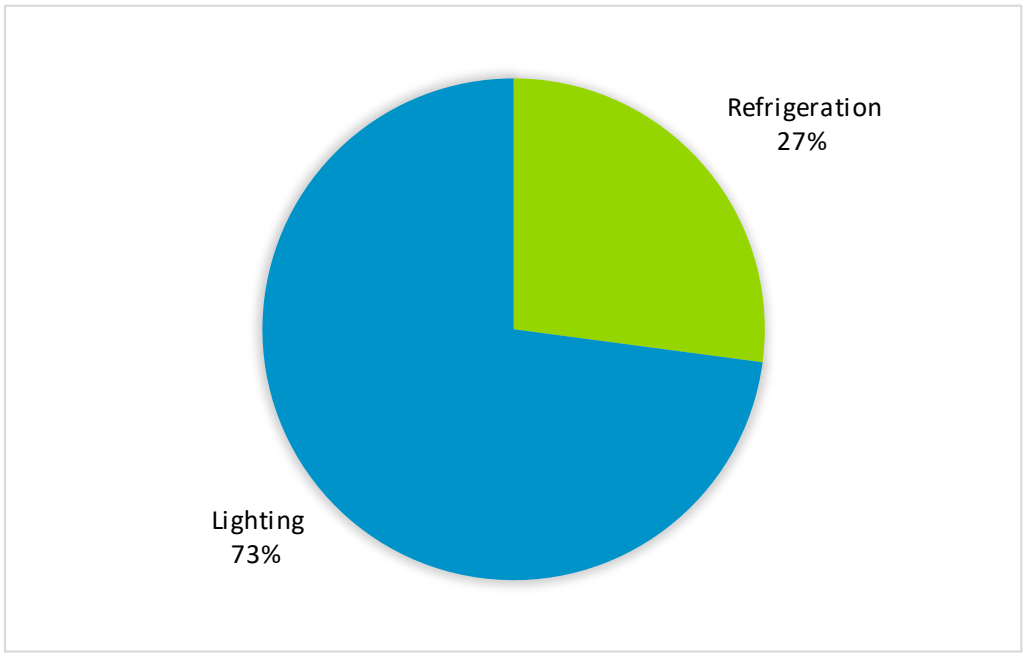
* Participants are defined as unique ComEd account numbers
† Installed projects are defined as unique Project IDS
Source: ComEd tracking data and evaluation team analysis

Figure 2-1. Percentage of Measures Installed by Type



Source: ComEd tracking data and evaluation team analysis

Figure 2-2. Percentage of Measures Installed by End Use



Source: ComEd tracking data and evaluation team analysis

3. Program Savings Detail

Table 3-1 summarizes the incremental energy and demand savings the Grocery Program achieved in CY2019. Total verified net energy savings is 5,560,834 kWh. The implementer did not claim gas savings for this program.

Table 3-1. CY2019 Total Annual Incremental Electric Savings

Savings Category	Energy Savings (kWh)	Non-Coincident Demand Savings (kW)	Summer Peak* Demand Savings (kW)
Electricity			
Ex Ante Gross Savings	6,044,385	NR	891
Program Gross Realization Rate	1.00	1.00	1.00
Verified Gross Savings	6,044,385	1,163	891
Program Net-to-Gross Ratio (NTG)	0.92	0.92	0.92
Verified Net Savings	5,560,834	1,070	819
Converted from Gas†			
Ex Ante Gross Savings	0	NA	0.00
Program Gross Realization Rate	0.00	NA	0.00
Verified Gross Savings	0	NA	0.00
Program Net-to-Gross Ratio (NTG)	0.00	NA	0.00
Verified Net Savings	0	NA	0.00
Total Electric Plus Gas			
Ex Ante Gross Savings	6,044,385	NR	891
Program Gross Realization Rate	1.00	1.00	1.00
Verified Gross Savings	6,044,385	1,163	891
Program Net-to-Gross Ratio (NTG)	0.92	0.92	0.92
Verified Net Savings	5,560,834	1,070	819

NR = Not reported (refers a piece of data that was not reported, i.e., non-coincident demand savings)
NA = Not applicable (refers a piece of data cannot be produced or does not apply)
* The coincident summer peak period is defined as 1:00-5:00 p.m. Central Prevailing Time on non-holiday weekdays, June through August.
† The implementer did not claim gas savings claimed for this program.
Source: ComEd tracking data and evaluation team analysis

4. Cumulative Persisting Annual Savings

Table 4-1 and Figure 4-1 show the measure-specific and total verified gross savings for the Grocery Program and the cumulative persisting annual savings (CPAS) for the measures installed in CY2019. The net electric CPAS across all measures installed in 2019 is 5,560,834 kWh (Table 4-1). The implementer did not claim gas savings through this program and as such electric CPAS is equivalent to total CPAS. Because this is a new program, the “historic contribution” values equal zero.

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

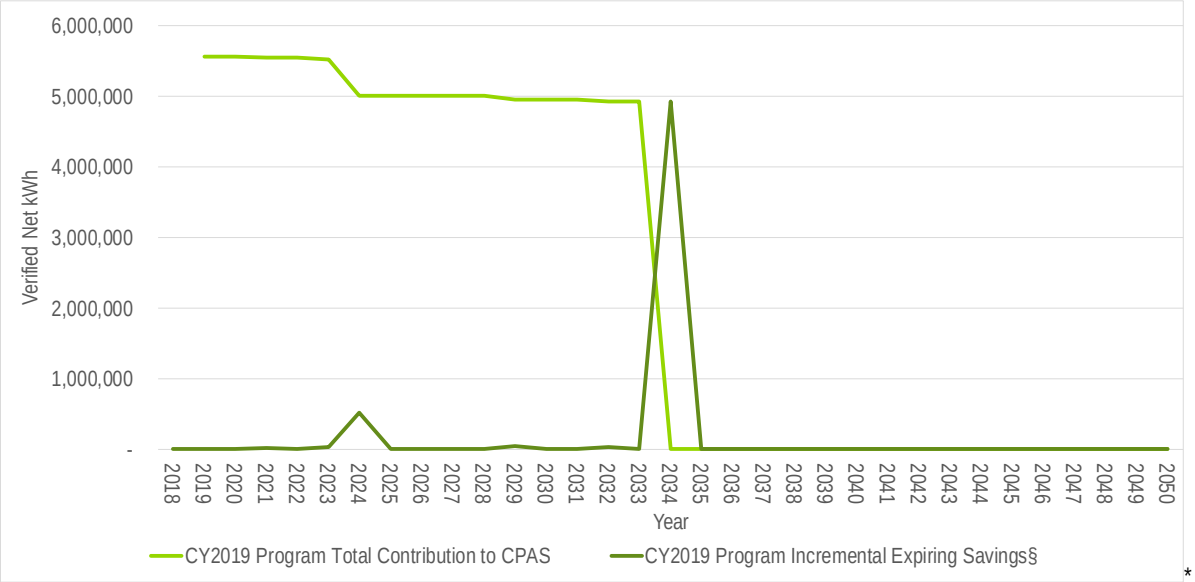
End Use Type	Research Category	EUL	CY2019 Verified Gross Savings (kWh)	NTG*	Lifetime Net Savings (kWh)†	Verified Net kWh Savings 2018	2019	2020	2021	2022	2023
Lighting	LED Lighting: Interior	15.0	3,810,235	0.92	47,941,218		3,505,416	3,505,416	3,488,477	3,488,477	3,488,477
Lighting	LED Lighting: Exterior	15.0	709,797	0.92	9,274,591		653,013	653,013	653,013	653,013	653,013
Lighting	LED Lighting: Case	15.0	646,215	0.92	8,722,073		594,517	594,517	594,517	594,517	594,517
Refrigeration	VFD for Condenser Fans	15.0	449,980	0.92	6,209,724		413,982	413,982	413,982	413,982	413,982
Refrigeration	EC Motor	15.0	302,960	0.92	4,180,848		278,723	278,723	278,723	278,723	278,723
Refrigeration	Evaporator Fan Control	13.0	38,115	0.92	455,855		35,066	35,066	35,066	35,066	35,066
Refrigeration	Anti-Sweat Heater Controls	10.0	36,801	0.92	338,569		33,857	33,857	33,857	33,857	33,857
Refrigeration	Strip Curtains	4.0	34,570	0.92	127,218		31,804	31,804	31,804	31,804	
Refrigeration	Q-Sync Motors	10.0	11,281	0.92	103,781		10,378	10,378	10,378	10,378	10,378
Refrigeration	Automatic Door Closer	8.0	2,829	0.92	20,821		2,603	2,603	2,603	2,603	2,603
Lighting Controls	Occupancy Sensors	8.0	1,603	0.92	11,798		1,475	1,475	1,475	1,475	1,475
CY2019 Program Total Electric Contribution to CPAS			6,044,385		77,386,496		5,560,834	5,560,834	5,543,895	5,543,895	5,512,091
Historic Program Total Electric Contribution to CPAS‡											
Program Total Electric CPAS							5,560,834	5,560,834	5,543,895	5,543,895	5,512,091
CY2019 Program Incremental Expiring Electric Savings§								-	16,939	-	31,804
Historic Program Incremental Expiring Electric Savings‡§							-	-	-	-	-
Program Total Incremental Expiring Electric Savings§							-	-	16,939	-	31,804

End Use Type	Research Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Lighting	LED Lighting: Interior	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	3,046,495	
Lighting	LED Lighting: Exterior	600,952	600,952	600,952	600,952	600,952	600,952	600,952	600,952	600,952	600,952	
Lighting	LED Lighting: Case	574,949	574,949	574,949	574,949	574,949	574,949	574,949	574,949	574,949	574,949	
Refrigeration	VFD for Condenser Fans	413,982	413,982	413,982	413,982	413,982	413,982	413,982	413,982	413,982	413,982	
Refrigeration	EC Motor	278,723	278,723	278,723	278,723	278,723	278,723	278,723	278,723	278,723	278,723	
Refrigeration	Evaporator Fan Control	35,066	35,066	35,066	35,066	35,066	35,066	35,066	35,066			
Refrigeration	Anti-Sweat Heater Controls	33,857	33,857	33,857	33,857	33,857						
Refrigeration	Strip Curtains											
Refrigeration	Q-Sync Motors	10,378	10,378	10,378	10,378	10,378						
Refrigeration	Automatic Door Closer	2,603	2,603	2,603								
Lighting Controls	Occupancy Sensors	1,475	1,475	1,475								
CY2019 Program Total Electric Contribution to CPAS		4,998,479	4,998,479	4,998,479	4,994,402	4,994,402	4,950,167	4,950,167	4,950,167	4,915,101	4,915,101	-
Historic Program Total Electric Contribution to CPAS‡												
Program Total Electric CPAS		4,998,479	4,998,479	4,998,479	4,994,402	4,994,402	4,950,167	4,950,167	4,950,167	4,915,101	4,915,101	-
CY2019 Program Incremental Expiring Electric Savings		513,612	-	-	4,077	-	44,235	-	-	35,066	-	4,915,101
Historic Program Incremental Expiring Electric Savings		-	-	-	-	-	-	-	-	-	-	-
Program Total Incremental Expiring Electric Savings§		513,612	-	-	4,077	-	44,235	-	-	35,066	-	4,915,101

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.
* A deemed value. Source: is to be found on the Illinois 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
Source: Evaluation team analysis

Figure 4-1. Cumulative Persisting Annual Savings



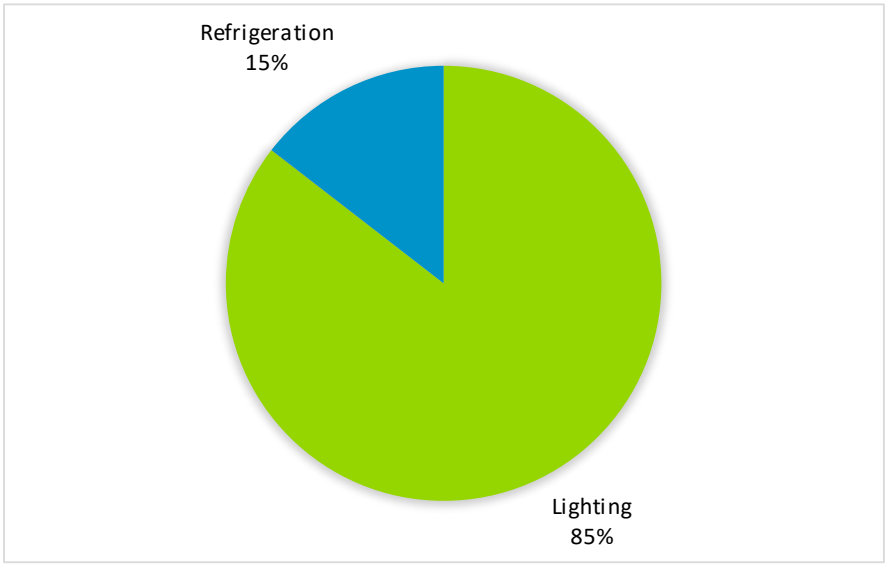
*

Expiring savings are equal to CPAS Y_{n-1} - CPAS Y_n.
Source: Evaluation team analysis

5. Program Savings by Measure

The program includes 11 primary measure types as shown in the following tables. The lighting measures contributed the greatest savings at 85% (see Figure 5-1). Energy, non-coincidental demand, and peak demand savings are summarized in Table 5-1, Table 5-2, and Table 5-3, respectively. The implementer did not claim any water savings for this program.

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



Source: Evaluation team analysis

Table 5-1. CY2019 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	LED Lighting: Interior	3,810,235	1.00	3,810,235	0.92	3,505,416	15.0
Lighting	LED Lighting: Exterior	709,797	1.00	709,797	0.92	653,013	15.0
Lighting	LED Lighting: Case	646,215	1.00	646,215	0.92	594,517	15.0
Refrigeration	VFD for Condenser Fans	449,980	1.00	449,980	0.92	413,982	15.0
Refrigeration	EC Motor	302,960	1.00	302,960	0.92	278,723	15.0
Refrigeration	Evaporator Fan Control	38,115	1.00	38,115	0.92	35,066	13.0
Refrigeration	Anti-Sweat Heater Control	36,801	1.00	36,801	0.92	33,857	10.0
Refrigeration	Strip Curtains	34,570	1.00	34,570	0.92	31,804	4.0
Refrigeration	Q-Sync Motors	11,281	1.00	11,281	0.92	10,378	10.0
Refrigeration	Automatic Door Closer	2,829	1.00	2,829	0.92	2,603	8.0
Lighting Controls	Occupancy Sensors	1,603	1.00	1,603	0.92	1,475	8.0
	Total	6,044,385	1.00	6,044,385	0.92	5,560,834	14.9

NA = Not applicable
* A deemed value. Source: is to be found on the Illinois SAG web site here: https://www.ilsag.info/ntg_2019.
Source: ComEd tracking data and evaluation team analysis

Table 5-2. CY2019 Non-Coincident Demand Savings by Measure

End Use Type	Research Category	Ex Ante Gross Non-Coincident Demand Reduction (kW)	Verified Gross Realization Rate	Verified Gross Non-Coincident Demand Reduction (kW)	NTG*	Verified Net Non-Coincident Demand Reduction (kW)
Lighting	LED Lighting: Interior	NR	1.00	1,007	0.92	927
Lighting	LED Lighting: Exterior	NR	1.00	0	0.92	0
Lighting	LED Lighting: Case	NR	1.00	110	0.92	101
Refrigeration	VFD for Condenser Fans	NR	1.00	0	0.92	0
Refrigeration	EC Motor	NR	1.00	35	0.92	32
Refrigeration	Evaporator Fan Control	NR	1.00	4	0.92	4
Refrigeration	Anti-Sweat Heater Controls	NR	1.00	0	0.92	0
Refrigeration	Strip Curtains	NR	1.00	4	0.92	4
Refrigeration	Q-Sync Motors	NR	1.00	1	0.92	1
Refrigeration	Automatic Door Closer	NR	1.00	0	0.92	0
Lighting Controls	Occupancy Sensors	NR	1.00	1	0.92	1
	Total	NR	1.00	1,163	NA	1,070

NR = Not reported
NA = Not applicable
* A deemed value. Source: is to be found on the Illinois SAG web site here: https://www.ilsag.info/ntg_2019.
Source: ComEd tracking data and evaluation team analysis

Table 5-3. CY2019 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	LED Lighting: Interior	735	1.00	735	0.92	677
Lighting	LED Lighting: Exterior	0	1.00	0	0.92	0
Lighting	LED Lighting: Case	110	1.00	110	0.92	101
Refrigeration	VFD for Condenser Fans	0	1.00	0	0.92	0
Refrigeration	EC Motor	35	1.00	35	0.92	32
Refrigeration	Evaporator Fan Control	4	1.00	4	0.92	4
Refrigeration	Anti-Sweat Heater Controls	0	1.00	0	0.92	0
Refrigeration	Strip Curtains	4	1.00	4	0.92	4
Refrigeration	Q-Sync Motors	1	1.00	1	0.92	1
Refrigeration	Automatic Door Closer	0	1.00	0	0.92	0
Lighting Controls	Occupancy Sensors	1	1.00	1	0.92	1
	Total	891	1.00	891	NA	819

NA = Not applicable
* A deemed value. Source: is to be found on the Illinois SAG web site here: https://www.ilsag.info/ntg_2019.
Source: ComEd tracking data and evaluation team analysis

6. Impact Analysis Findings and Recommendations

6.1 Impact Parameter Estimates

The evaluation team utilized parameters deemed by the Illinois TRM (TRM) v7.0 and validated the parameters that were not specified in the TRM. The results are shown in the following table.

Table 6-1. Savings Parameters

Gross Savings Input Parameters	Value	Units	Deemed or Evaluated?	Source *
Quantity of Installation	field-collected	# measures	Evaluated	Detailed review of provided project workbooks and measure invoices
NTG	92	%	Deemed	SAG Consensus
Hours of Use (LED Lighting)	varies by building type	Hours/year	Deemed	Project workbooks including fixture location information and inputs where drawn from TRM v7.0 – Section 4.5.4
Lighting pre and post wattage	varies by fixture type	Watts	Evaluated	TRM v7.0 – for baseline wattage and measure invoice for post wattage
Lighting waste heat factors	0	Btu/watts	Deemed	TRM v7.0 - Calculated savings apply WHF but penalty due to WHF reported as zero in tracking data (per program protocol)
Refrigeration	varies by climate zone	kWh savings/HP	Deemed	Climate zones where confirmed for each project and TRM v7.0 – Section 4.6.12 provided deemed inputs
Refrigeration	field-collected	HP/motor	Evaluated	Detailed motor information was not provided in invoices as noted in the findings below

NA = Not applicable
* TRM is the State of Illinois Technical Reference Manual version 7.0 from http://www.ilsag.info/technical-reference-manual.html. The NTG values can be found on the Illinois SAG web site here: https://www.ilsag.info/ntg_2019 or http://ilsagfiles.org/SAG_files/NTG/2019_NTG_Meetings/Final_Values/ComEd_NTG_History_and_CY2019_Recommendations_2018-10-01.xlsx
**Referenced workpaper is the "ComEd Grocery Offering Workpaper, CLEAResult, March 29, 2019"
Source: ComEd tracking data and evaluation team analysis

6.2 Other Impact Findings and Recommendations

The evaluation team developed recommendations based on findings from the CY2019 evaluation. The CY2019 Grocery Program achieved 5,560,834 kWh of verified net energy savings; the overall program realization rate was 100%.

6.2.1 Variable Frequency Drives

Finding 1. Savings for the Variable Frequency Drive (VFD) measure are calculated according to the number of motors and motor HP retrofitted with VFDs (it is typical to install one VFD per multiple motors).

Electric Energy Savings

$$\text{Annual } \Delta kWh_{condenser} = \text{No. fans} * \text{HP/fan} * \text{kWh savings/HP}$$

Where,

No.fans = number of fan motors retrofitted with VFD

Based on the invoice documentation provided, Guidehouse verified the number of VFDs installed in each project sample. However, Guidehouse could not verify the number of motors retrofitted with each VFD since this number was simply listed and not supported with

documentation, except in the case of ESG-27. The number of motors must be substantiated by an independent site report or equivalent to allow for accurate verification.

Recommendation 1. Guidehouse recommends the implementation contractor (IC) include a site report that documents the number of motors retrofitted and the HP for each motor with VFDs to allow for an accurate and substantiated verification of savings.

6.2.2 Lighting

Finding 2. Guidehouse could not initially verify lighting calculations for the sample projects based on the workbooks provided because calculation fields and input data were hidden and locked. The lighting savings calculation workbooks included columns and tabs that were hidden and could not be "unhidden." Many cells in the provided lighting workbooks were locked in such a way that the contents of the cells could not be selected, and the associated calculations could not be reviewed. Guidehouse verified lighting calculations by recreating the workbooks using invoice quantities and specification documentation.

Recommendation 2. Guidehouse recommends the IC submit workbooks that are not password protected to enable accurate and substantiated verification of savings.

Finding 3. Guidehouse noted that zero heating penalty (therms) was included at the *program* level tracker. This is consistent with how heating penalty is handled in the other programs

Recommendation 3. Guidehouse recommends the IC add the heating penalty data field to the tracker to enable an accurate and substantiated verification of savings if this information is necessary in the future. In order to do this, the IC should also include building type (grocery or convenience store) and heating fuel type for each project.

6.2.3 Program

Finding 4. Guidehouse calculated the program non-coincident demand savings by applying the appropriate coincident factor. The IC did not provide this information in the tracker.

Recommendation 4. Guidehouse recommends the IC report the non-coincident demand savings in the tracking data.

7. Appendix 1. Impact Analysis Methodology

Guidehouse initiated the impact evaluation process by designing a sample of the CY2019 Grocery Program measures. Measures were categorized by annual energy savings strata defined as follows.

- Small – Less than 25,000 kWh
- Mid – 25,000 to 50,000 kWh
- Large – Greater than 50,000 kWh

To achieve the 85% confidence interval and 15% maximum relative precision, Guidehouse selected 30 measures from19 participants according to the following distribution numbers:

- Small – 10
- Mid – 10
- Large – 10

Guidehouse evaluated savings calculations for the above-listed sample distribution and derived a realization rate for the program. This realization rate was then applied to ex ante program savings to produce the verified gross ex post savings.

Guidehouse determined verified gross savings for each program measure by:

1. Reviewing the savings algorithm inputs in the measure workbook for agreement with the TRM v7.0 and the TRM v7.0 Errata, where applicable.
2. Validating the savings algorithm was applied correctly.
3. Cross-checking per-unit savings values in the tracking data with the verified values in the measure workbook or in Guidehouse's calculations if the workbook did not agree with the TRM.
4. Multiplying the verified per-unit savings value by the quantity reported in the IC workbook data.

Guidehouse calculated verified net energy and coincident peak demand savings by multiplying the verified gross savings estimates by a net-to-gross (NTG). For the Grocery Program, the NTG is deemed as 0.92 through the SAG consensus process.

Guidehouse used the following documents to verify the per-unit savings for each program measure:

- Final ComEd CY2019 tracking data: "ESG_CY2019_EOY_Data_Rev1_01172020.xlsx"
- Illinois Technical Reference Manual (TRM v7.0) for deemed input parameters or secondary evaluation research to verify any custom inputs used in the ex ante calculations.
- Implementer Savings Calculations: "08-[site name] -Final Grocery Lighting Workbook ComEd.xlsx"
- Implementer's W-9s, program applications, measure specifications, and measure invoices for each sample project
- ComEd Grocery Offering Workpaper, CLEAResult, March 29, 2019

8. Appendix 3. Total Resource Cost Detail

Table 8-1 shows the Total Resource Cost (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) are not included in this table and will be provided to the evaluation team later.

Table 8-1. Total Resource Cost Savings Summary

End Use Type	Research Category	Units	Quantity	EUL (years)*	ER Flag†	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)
Lighting	LED Lighting: Interior	Lamp/Fixture	30	15.0	No	3,810,235	735.43	0	0	-79,833	0.92	0.92	0.92	3,505,416	676.59	0	0	-73,447
Lighting	LED Lighting: Exterior	Lamp/Fixture	12	15.0	No	709,797	0.00	0	0	0	0.92	0.92	0.92	653,013	0.00	0	0	0
Lighting	LED Lighting: Case	Lamp/Fixture	33	15.0	No	646,215	109.72	0	0	0	0.92	0.92	0.92	594,517	100.94	0	0	0
Refrigeration	VFD for Condenser Fans	Each	11	15.0	No	449,980	0.00	0	0	0	0.92	0.92	0.92	413,982	0.00	0	0	0
Refrigeration	EC Motor	Each	6	15.0	No	302,960	34.58	0	0	0	0.92	0.92	0.92	278,723	31.82	0	0	0
Refrigeration	Evaporator Fan Control	Each	3	13.0	No	38,115	4.35	0	0	0	0.92	0.92	0.92	35,066	4.00	0	0	0
Refrigeration	Anti-Sweat Heater Controls	Each	3	10.0	No	36,801	0.00	0	0	0	0.92	0.92	0.92	33,857	0.00	0	0	0
Refrigeration	Strip Curtains	Each	5	4.0	No	34,570	3.94	0	0	0	0.92	0.92	0.92	31,804	3.63	0	0	0
Refrigeration	Q-Sync Motors	Each	2	10.0	No	11,281	1.30	0	0	0	0.92	0.92	0.92	10,378	1.19	0	0	0
Refrigeration	Automatic Door Closer	Each	1	8.0	No	2,829	0.41	0	0	0	0.92	0.92	0.92	2,603	0.38	0	0	0
Lighting Controls	Occupancy Sensors	Each	1	8.0	No	1,603	0.97	0	0	0	0.92	0.92	0.92	1,475	0.89	0	0	0
	Total			14.9		6,044,385	891	0	0	-79,833	0.92	0.92	0.92	5,560,834	819	0	0	-73,447

NA = Not applicable

* 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