



ComEd Efficient Choice Pilot Impact Evaluation Report

Energy Efficiency/Demand Response Plan:
Program Year 2021 (CY2021)
(1/1/2021-12/31/2021)

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FINAL

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1. Introduction

This report presents the results of the impact evaluation of the CY2021 Efficient Choice Pilot. It summarizes the total energy and demand impacts for the pilot broken out by relevant measure and pilot structure details. The appendices provide the impact analysis methodology and details of the total resource cost (TRC) analysis inputs. CY2021 covers January 1, 2021 through December 31, 2021.

2. Pilot Description

ComEd’s Efficient Choice Pilot is an online website that encourages customers to make energy efficient choices without incentives. The website provides information about appliances, consumer electronics, and heating, ventilation, and air conditioning (HVAC) measures. This website is intended to influence visitors to make more efficient purchases by using an Enervee Score, which rates products based on their efficiency, and other behavioral levers.

The Efficient Choice Pilot includes several different appliance and consumer electronics measures (shown in Table 2-1 and Figure 2-1).

Table 2-1. Number of Measures by Type

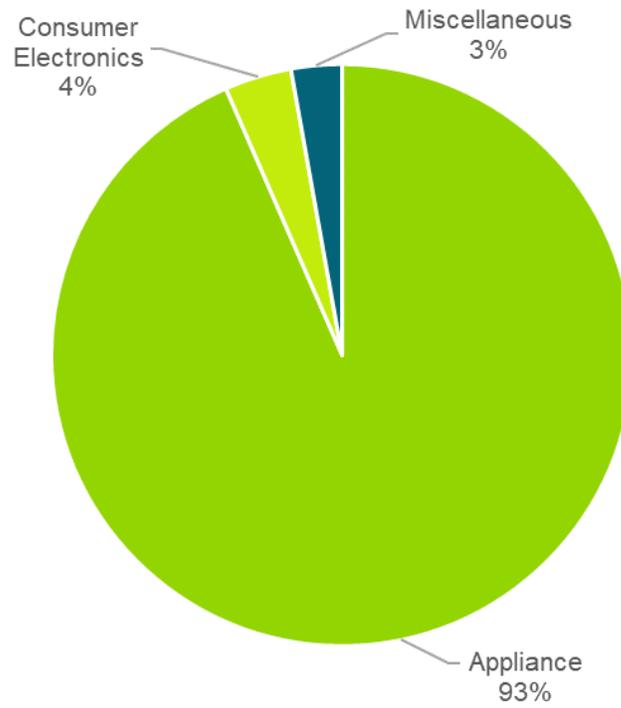
End Use Type	Research Category	Projected Number of Active Website Visitors*	Unit
Appliance	Refrigerators	23,620	each
Appliance	Electric Dryers	8,550	each
Appliance	Washers	10,834	each
Consumer Electronics	Televisions	1,212	each
Appliance	Room Air Conditioners	1,068	each
Appliance	Dishwashers	759	each
Appliance	Air Purifiers	165	each
Appliance	Freezers	428	each
Appliance	Dehumidifiers	105	each
Consumer Electronics	Monitors	25	each
Consumer Electronics	Sound Bars	36	each
Miscellaneous	EV Chargers	24	each
Total		46,826	

*Given the timing of the pilot, the implementer provided the number of active visitors for a 9-month period. Guidehouse projected annual active website visitors through linear extrapolation.

EV – electric vehicle

Source: ComEd tracking data and evaluation team analysis

Figure 2-1. Share of Measures by End Use Type



Source: ComEd tracking data and evaluation team analysis

3. Pilot Savings Detail

Table 3-1 summarizes the incremental energy and demand savings the Efficient Choice Pilot achieved in CY2021.

Typically, Guidehouse applies net-to-gross (NTG) ratios deemed through the annual Illinois Stakeholder Advisory Group (SAG) process. However, no deemed NTG research had been conducted for this pilot, so it was not included in NTG recommendations from the Illinois SAG. Guidehouse and ComEd staff reviewed various NTG methods, such as the Energy Saving Kits and Elementary Education Protocol (Section 4.7) and the Prescriptive Rebate (With No Audit) Protocol (Section 4.4) from Illinois Technical Reference Manual v9.0 (IL-TRM)¹ to evaluate NTG. After careful review, Guidehouse and ComEd staff determined the Prescriptive Rebate (With No Audit) Protocol to be the most appropriate protocol. Guidehouse used this method to evaluate NTG for this pilot and used the results to calculate verified net savings (described in Appendix A and Appendix B)².

Table 3-1. Total Annual Incremental Electric Savings

Savings Category	Units	Ex Ante Gross Savings	Pilot Gross Realization Rate	Verified Gross Savings	Pilot Net-to-Gross Ratio (NTG)	CY2019 Net Carryover Savings	CY2020 Net Carryover Savings	Verified Net Savings
Electric Energy Savings - Direct	kWh	NR	N/A	278,151	0.63	N/A	N/A	174,134
Electric Energy Savings - Converted from Gas‡	kWh	NR	N/A	50,577	0.62	N/A	N/A	31,357
Total Electric Energy Savings	kWh	NR	N/A	328,728	0.63	N/A	N/A	205,492
Summer Peak Demand Savings§	KW	NR	N/A	52.46	0.62	N/A	N/A	32.78

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

‡ Gas savings are 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 team will determine which gas savings will be converted to kWh and counted toward ComEd's electric savings goal while producing the portfolio-wide Summary Report. 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 coincident summer peak period is defined as 1:00-5:00 p.m. Central Prevailing Time on non-holiday weekdays, June through August.

Source: ComEd tracking data and evaluation team analysis

¹ In this report, unless stated otherwise, IL-TRM refers to version 9.0 (v9.0).

² "ComEd Efficient Choice Pilot Evaluation Findings Memo", sent to ComEd November 30, 2021.

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 Efficient Choice Pilot and the cumulative persisting annual savings (CPAS) for the measures installed in CY2021. The electric CPAS across all measures installed in 2021 is shown in Table 4-1. The CY2021 gas contribution to CPAS (converted to equivalent electricity) is shown in Table 4-2. The combined savings are shown in Table 4-3. Figure 4-1 shows the savings across the effective useful life (EUL) of the measures.

Table 4-1. Cumulative Persisting Annual Savings – Electric

End Use Type	Research Category	EUL	CY2021 Verified Gross Savings (kWh)	NTG*	Lifetime Net Savings (kWh)†	Verified Net kWh Savings									
						2018	2019	2020	2021	2022	2023	2024	2025	2026	
Appliance	Refrigerators	17.0	200,695	0.63	2,149,443				126,438	126,438	126,438	126,438	126,438	126,438	
Appliance	Electric Dryers	16.0	32,660	0.61	318,761				19,923	19,923	19,923	19,923	19,923	19,923	
Appliance	Washers	14.0	24,773	0.62	215,026				15,359	15,359	15,359	15,359	15,359	15,359	
Consumer Electronics	Televisions	6.0	15,415	0.62	57,344				9,557	9,557	9,557	9,557	9,557	9,557	
Appliance	Room Air Conditioners	12.0	1,604	0.62	11,933				994	994	994	994	994	994	
Appliance	Dishwashers	11.0	1,169	0.62	7,970				725	725	725	725	725	725	
Appliance	Air Purifiers	9.0	717	0.62	4,002				445	445	445	445	445	445	
Appliance	Freezers	22.0	513	0.62	6,999				318	318	318	318	318	318	
Appliance	Dehumidifiers	12.0	379	0.62	2,817				235	235	235	235	235	235	
Consumer Electronics	Sound Bars	4.0	93	0.62	231				58	58	58	58			
Consumer Electronics	Monitors	7.0	91	0.62	395				56	56	56	56	56	56	
Miscellaneous	EV Chargers	10.0	43	0.62	266				27	27	27	27	27	27	
CY2021 Pilot Total Electric Contribution to CPAS			278,151		2,775,188				174,134	174,134	174,134	174,134	174,076	174,076	
Historic Pilot Total Electric Contribution to CPAS‡															
Pilot Total Electric CPAS									-	-	-	174,134	174,134	174,076	174,076
CY2021 Pilot Incremental Expiring Electric Savings§														58	-
Historic Pilot Incremental Expiring Electric Savings														-	-
Pilot Total Incremental Expiring Electric Savings														58	-

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Appliance	Refrigerators	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438
Appliance	Electric Dryers	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923
Appliance	Washers	15,359	15,359	15,359	15,359	15,359	15,359	15,359	15,359				
Consumer Electronics	Televisions												
Appliance	Room Air Conditioners	994	994	994	994	994	994						
Appliance	Dishwashers	725	725	725	725	725							
Appliance	Air Purifiers	445	445	445									
Appliance	Freezers	318	318	318	318	318	318	318	318	318	318	318	318
Appliance	Dehumidifiers	235	235	235	235	235	235						
Consumer Electronics	Sound Bars												
Consumer Electronics	Monitors	56											
Miscellaneous	EV Chargers	27	27	27	27								
CY2021 Pilot Total Electric Contribution to CPAS		164,519	164,463	164,463	164,018	163,991	163,267	162,038	162,038	146,679	146,679	126,756	318
Historic Pilot Total Electric Contribution to CPAS‡													
Pilot Total Electric CPAS		164,519	164,463	164,463	164,018	163,991	163,267	162,038	162,038	146,679	146,679	126,756	318
CY2021 Pilot Incremental Expiring Electric Savings§		9,557	56	-	445	27	725	1,229	-	15,359	-	19,923	126,438
Historic Pilot Incremental Expiring Electric Savings		-											
Pilot Total Incremental Expiring Electric Savings		9,557	56	-	445	27	725	1,229	-	15,359	-	19,923	126,438
End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance	Refrigerators												
Appliance	Electric Dryers												
Appliance	Washers												
Consumer Electronics	Televisions												
Appliance	Room Air Conditioners												
Appliance	Dishwashers												
Appliance	Air Purifiers												
Appliance	Freezers	318	318	318	318								
Appliance	Dehumidifiers												
Consumer Electronics	Sound Bars												
Consumer Electronics	Monitors												
Miscellaneous	EV Chargers												
CY2021 Pilot Total Electric Contribution to CPAS		318	318	318	318	-							
Historic Pilot Total Electric Contribution to CPAS‡													
Pilot Total Electric CPAS		318	318	318	318	-							
CY2021 Pilot Incremental Expiring Electric Savings§		-	-	-	-	318	-						
Historic Pilot Incremental Expiring Electric Savings		-											
Pilot Total Incremental Expiring Electric Savings		-	-	-	-	318	-						

Note: The green highlighted cell shows pilot total first-year electric savings. The gray cells are blank, indicating values irrelevant to the CY2021 contribution to CPAS.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

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

‡ The Efficient Choice Pilot was new in CY2021, so there were no historic savings.

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

Source: Evaluation team analysis

Table 4-2. Cumulative Persisting Annual Savings – Gas

End Use Type	Research Category	EUL	CY2021 Verified Gross Savings (Therms)	Lifetime Net Savings (Therms)†	Verified Net Therms Savings									
					2018	2019	2020	2021	2022	2023	2024	2025	2026	
Appliance	Refrigerators	17.0	-	0.63	-	-	-	-	-	-	-	-	-	
Appliance	Electric Dryers	16.0	-	0.61	-	-	-	-	-	-	-	-	-	
Appliance	Washers	14.0	1,700	0.62	14,758	-	-	-	1,054	1,054	1,054	1,054	1,054	1,054
Consumer Electronics	Televisions	6.0	-	0.62	-	-	-	-	-	-	-	-	-	
Appliance	Room Air Conditioners	12.0	-	0.62	-	-	-	-	-	-	-	-	-	
Appliance	Dishwashers	11.0	25	0.62	173	-	-	-	16	16	16	16	16	16
Appliance	Air Purifiers	9.0	-	0.62	-	-	-	-	-	-	-	-	-	
Appliance	Freezers	22.0	-	0.62	-	-	-	-	-	-	-	-	-	
Appliance	Dehumidifiers	12.0	-	0.62	-	-	-	-	-	-	-	-	-	
Consumer Electronics	Sound Bars	4.0	-	0.62	-	-	-	-	-	-	-	-	-	
Consumer Electronics	Monitors	7.0	-	0.62	-	-	-	-	-	-	-	-	-	
Miscellaneous	EV Chargers	10.0	-	0.62	-	-	-	-	-	-	-	-	-	
CY2021 Pilot Total Gas Contribution to CPAS (Therms)			1,726	14,931					1,070	1,070	1,070	1,070	1,070	1,070
CY2021 Pilot Total Gas Contribution to CPAS (kWh Equivalent)‡									31,357	31,357	31,357	31,357	31,357	31,357
Historic Pilot Total Gas Contribution to CPAS (kWh Equivalent)§														
Pilot Total Gas CPAS (kWh Equivalent)									31,357	31,357	31,357	31,357	31,357	31,357
CY2021 Pilot Incremental Expiring Gas Savings (Therms)														
CY2021 Pilot Incremental Expiring Gas Savings (kWh Equivalent) 														
Historic Pilot Incremental Expiring Gas Savings (kWh Equivalent)														
Pilot Total Incremental Expiring Gas Savings (kWh Equivalent)														

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Appliance	Refrigerators	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Electric Dryers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Washers	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054	-	-	-	-
Consumer Electronics	Televisions	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Room Air Conditioners	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Dishwashers	16	16	16	16	16	-	-	-	-	-	-	-
Appliance	Air Purifiers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Freezers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Dehumidifiers	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	Sound Bars	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	Monitors	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous	EV Chargers	-	-	-	-	-	-	-	-	-	-	-	-
CY2021 Pilot Total Gas Contribution to CPAS (Therms)		1,070	1,070	1,070	1,070	1,070	1,054	1,054	1,054	-	-	-	-
CY2021 Pilot Total Gas Contribution to CPAS (kWh Equivalent)‡		31,357	31,357	31,357	31,357	31,357	30,896	30,896	30,896	-	-	-	-
Historic Pilot Total Gas Contribution to CPAS (kWh Equivalent)§		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Gas CPAS (kWh Equivalent)		31,357	31,357	31,357	31,357	31,357	30,896	30,896	30,896	-	-	-	-
CY2021 Pilot Incremental Expiring Gas Savings (Therms)		-	-	-	-	-	16	-	-	1,054	-	-	-
CY2021 Pilot Incremental Expiring Gas Savings (kWh Equivalent) 		-	-	-	-	-	462	-	-	30,896	-	-	-
Historic Pilot Incremental Expiring Gas Savings (kWh Equivalent)		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Incremental Expiring Gas Savings (kWh Equivalent)		-	-	-	-	-	462	-	-	30,896	-	-	-
End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance	Refrigerators	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Electric Dryers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Washers	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	Televisions	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Room Air Conditioners	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Dishwashers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Air Purifiers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Freezers	-	-	-	-	-	-	-	-	-	-	-	-
Appliance	Dehumidifiers	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	Sound Bars	-	-	-	-	-	-	-	-	-	-	-	-
Consumer Electronics	Monitors	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous	EV Chargers	-	-	-	-	-	-	-	-	-	-	-	-
CY2021 Pilot Total Gas Contribution to CPAS (Therms)		-	-	-	-	-	-	-	-	-	-	-	-
CY2021 Pilot Total Gas Contribution to CPAS (kWh Equivalent)‡		-	-	-	-	-	-	-	-	-	-	-	-
Historic Pilot Total Gas Contribution to CPAS (kWh Equivalent)§		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Gas CPAS (kWh Equivalent)		-	-	-	-	-	-	-	-	-	-	-	-
CY2021 Pilot Incremental Expiring Gas Savings (Therms)		-	-	-	-	-	-	-	-	-	-	-	-
CY2021 Pilot Incremental Expiring Gas Savings (kWh Equivalent) 		-	-	-	-	-	-	-	-	-	-	-	-
Historic Pilot Incremental Expiring Gas Savings (kWh Equivalent)		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Incremental Expiring Gas Savings (kWh Equivalent)		-	-	-	-	-	-	-	-	-	-	-	-

Note: The green highlighted cell shows pilot total first-year gas savings in kWh equivalents. The gray cells are blank, indicating no values or do not contribute to calculating CPAS in CY2021.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

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

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

§ The Efficient Choice Pilot was new in CY2021, so there were no historic savings.

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

Source: Evaluation team analysis

Table 4-3. Cumulative Persisting Annual Savings – Total

End Use Type	Research Category	EUL	CY2021 Verified Gross Savings		Lifetime Net Savings (kWh)†	Verified Net kWh Savings (Including Those Converted from Gas Savings)								
			(kWh)	NTG*		2018	2019	2020	2021	2022	2023	2024	2025	2026
Appliance	Refrigerators	17.0	200,695	0.63	2,149,443				126,438	126,438	126,438	126,438	126,438	126,438
Appliance	Electric Dryers	16.0	32,660	0.61	318,761				19,923	19,923	19,923	19,923	19,923	19,923
Appliance	Washers	14.0	74,605	0.62	647,569				46,255	46,255	46,255	46,255	46,255	46,255
Consumer Electronics	Televisions	6.0	15,415	0.62	57,344				9,557	9,557	9,557	9,557	9,557	9,557
Appliance	Room Air Conditioners	12.0	1,604	0.62	11,933				994	994	994	994	994	994
Appliance	Dishwashers	11.0	1,913	0.62	13,048				1,186	1,186	1,186	1,186	1,186	1,186
Appliance	Air Purifiers	9.0	717	0.62	4,002				445	445	445	445	445	445
Appliance	Freezers	22.0	513	0.62	6,999				318	318	318	318	318	318
Appliance	Dehumidifiers	12.0	379	0.62	2,817				235	235	235	235	235	235
Consumer Electronics	Sound Bars	4.0	93	0.62	231				58	58	58	58	58	58
Consumer Electronics	Monitors	7.0	91	0.62	395				56	56	56	56	56	56
Miscellaneous	EV Chargers	10.0	43	0.62	266				27	27	27	27	27	27
CY2021 Pilot Total Contribution to CPAS				328,728		3,212,809			205,492	205,492	205,492	205,492	205,434	205,434
Historic Pilot Total Contribution to CPAS‡									-	-	-	-	-	-
Pilot Total CPAS									205,492	205,492	205,492	205,492	205,434	205,434
CY2021 Pilot Incremental Expiring Savings§													58	-
Historic Pilot Incremental Expiring Savings													-	-
Pilot Total Incremental Expiring Savings													58	-

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Appliance	Refrigerators	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438	126,438
Appliance	Electric Dryers	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923	19,923		
Appliance	Washers	46,255	46,255	46,255	46,255	46,255	46,255	46,255	46,255				
Consumer Electronics	Televisions												
Appliance	Room Air Conditioners	994	994	994	994	994	994						
Appliance	Dishwashers	1,186	1,186	1,186	1,186	1,186							
Appliance	Air Purifiers	445	445	445									
Appliance	Freezers	318	318	318	318	318	318	318	318	318	318	318	318
Appliance	Dehumidifiers	235	235	235	235	235	235						
Consumer Electronics	Sound Bars												
Consumer Electronics	Monitors	56											
Miscellaneous	EV Chargers	27	27	27	27								
CY2021 Pilot Total Contribution to CPAS		195,877	195,820	195,820	195,375	195,349	194,163	192,933	192,933	146,679	146,679	126,756	318
Historic Pilot Total Contribution to CPAS†		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total CPAS		195,877	195,820	195,820	195,375	195,349	194,163	192,933	192,933	146,679	146,679	126,756	318
CY2021 Pilot Incremental Expiring Savings§		9,557	56	-	445	27	1,186	1,229	-	46,255	-	19,923	126,438
Historic Pilot Incremental Expiring Savings		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Incremental Expiring Savings		9,557	56	-	445	27	1,186	1,229	-	46,255	-	19,923	126,438

End Use Type	Research Category	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance	Refrigerators												
Appliance	Electric Dryers												
Appliance	Washers												
Consumer Electronics	Televisions												
Appliance	Room Air Conditioners												
Appliance	Dishwashers												
Appliance	Air Purifiers												
Appliance	Freezers	318	318	318	318								
Appliance	Dehumidifiers												
Consumer Electronics	Sound Bars												
Consumer Electronics	Monitors												
Miscellaneous	EV Chargers												
CY2021 Pilot Total Contribution to CPAS		318	318	318	318	-	-	-	-	-	-	-	-
Historic Pilot Total Contribution to CPAS†		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total CPAS		318	318	318	318	-	-	-	-	-	-	-	-
CY2021 Pilot Incremental Expiring Savings§		-	-	-	-	318	-	-	-	-	-	-	-
Historic Pilot Incremental Expiring Savings		-	-	-	-	-	-	-	-	-	-	-	-
Pilot Total Incremental Expiring Savings		-	-	-	-	318	-	-	-	-	-	-	-

Note: The green highlighted cell shows pilot 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 CY2021.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

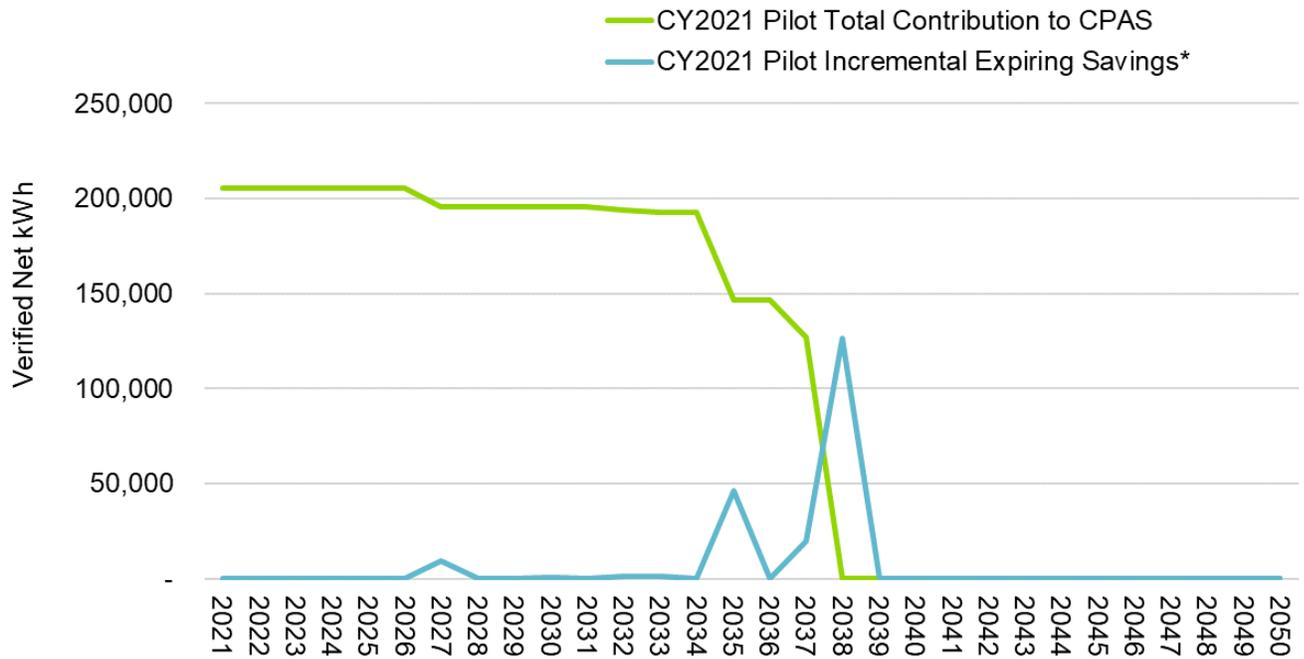
† Lifetime savings are the sum of CPAS savings through the EUL.

‡ The Efficient Choice Pilot was new in CY2021, so there were no historic savings.

§ 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. Pilot Savings by Measure

The pilot included the measures shown in Table 5-1 and Figure 5-1. The customer population includes ComEd customers who actively engaged with the Efficient Choice website by taking one or more of the following searching actions by measure:

- Filtered product lists
- Sorted product lists
- Saved a product search
- Favorited a product
- Selected a product
- Compared products (two distinct actions)
- Clicked on an offer
- Engaged with product recommendations
- Engaged with histogram

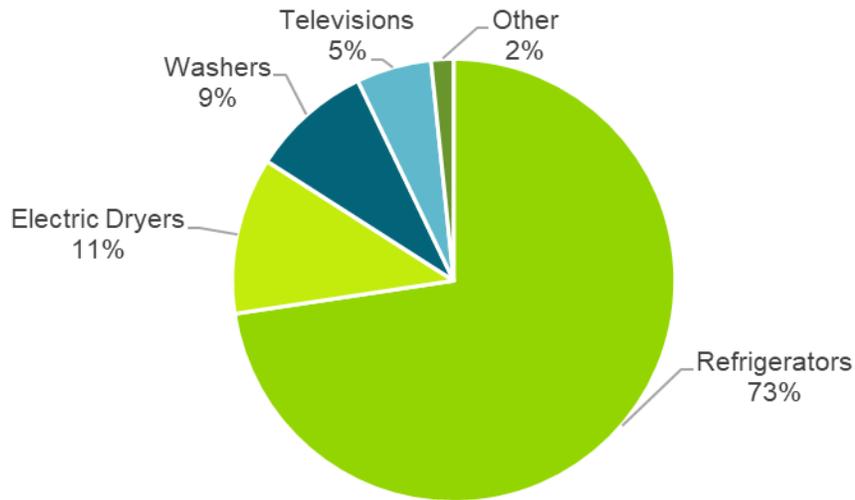
Table 5-1. Number of Measures by Type

End Use Type	Research Category	Projected Number of Active Website Visitors	Unit
Appliance	Refrigerators	23,620	each
Appliance	Electric Dryers	8,550	each
Appliance	Washers	10,834	each
Consumer Electronics	Televisions	1,212	each
Appliance	Room Air Conditioners	1,068	each
Appliance	Dishwashers	759	each
Appliance	Air Purifiers	165	each
Appliance	Freezers	428	each
Appliance	Dehumidifiers	105	each
Consumer Electronics	Sound Bars	25	each
Consumer Electronics	Monitors	36	each
Miscellaneous	EV Chargers	24	each
	Total	46,826	

Note: This is the same table as Table 2-1.

Source: ComEd tracking data and evaluation team analysis

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



Source: ComEd tracking data and evaluation team analysis

Measure-level energy and demand savings are shown in the following tables.

Table 5-2. 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)
Appliance	Refrigerators	NR	N/A	200,695	0.63	126,438	17.0
Appliance	Electric Dryers	NR	N/A	32,660	0.61	19,923	16.0
Appliance	Washers	NR	N/A	24,773	0.62	15,359	14.0
Consumer Electronics	Televisions	NR	N/A	15,415	0.62	9,557	6.0
Appliance	Room Air Conditioners	NR	N/A	1,604	0.62	994	12.0
Appliance	Dishwashers	NR	N/A	1,169	0.62	725	11.0
Appliance	Air Purifiers	NR	N/A	717	0.62	445	9.0
Appliance	Freezers	NR	N/A	513	0.62	318	22.0
Appliance	Dehumidifiers	NR	N/A	379	0.62	235	12.0
Consumer Electronics	Sound Bars	NR	N/A	93	0.62	58	4.0
Consumer Electronics	Monitors	NR	N/A	91	0.62	56	7.0
Miscellaneous	EV Chargers	NR	N/A	43	0.62	27	10.0
Total		NR	N/A	278,151	0.63	174,134	

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

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.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

Source: ComEd tracking data and evaluation team analysis

Table 5-3. 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)
Appliance	Refrigerators	NR	N/A	30.24	0.63	19.05
Appliance	Electric Dryers	NR	N/A	4.39	0.61	2.68
Appliance	Washers	NR	N/A	2.86	0.62	1.78
Consumer Electronics	Televisions	NR	N/A	13.29	0.62	8.24
Appliance	Room Air Condition	NR	N/A	1.90	0.62	1.18
Appliance	Dishwashers	NR	N/A	0.08	0.62	0.05
Appliance	Air Purifiers	NR	N/A	0.08	0.62	0.05
Appliance	Freezers	NR	N/A	0.08	0.62	0.05
Appliance	Dehumidifiers	NR	N/A	0.09	0.62	0.05
Consumer Electronics	Sound Bars	NR	N/A	0.00	0.62	0.00
Consumer Electronics	Monitors	NR	N/A	0.01	0.62	0.01
Miscellaneous	EV Chargers	NR	N/A	-0.57	0.62	-0.35
	Total	NR	N/A	52.46	0.62	32.78

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

Source: ComEd tracking data and evaluation team analysis

The Efficient Choice Pilot includes measures that save water. That reduction in water produces secondary kWh savings from water supply and wastewater treatment. Table 5-4 shows the secondary measure-level savings. The savings in this table are included in the electricity savings in the previous tables in this section.

Table 5-4. Secondary Energy Savings from Water Reduction by Measure – Electric

End Use Type	Research Category	Ex Ante Annual Water Savings (gallons)	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate (RR _{water})	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)
Appliance	Refrigerators	NR	NR	N/A	0	N/A	0
Appliance	Electric Dryers	NR	NR	N/A	0	N/A	0
Appliance	Washers	NR	NR	N/A	2,504	0.62	1,553
Consumer Electronics	Televisions	NR	NR	N/A	0	N/A	0
Appliance	Room Air Condition	NR	NR	N/A	0	N/A	0
Appliance	Dishwashers	NR	NR	N/A	40	0.62	25
Appliance	Air Purifiers	NR	NR	N/A	0	N/A	0
Appliance	Freezers	NR	NR	N/A	0	N/A	0
Appliance	Dehumidifier	NR	NR	N/A	0	N/A	0
Consumer Electronics	Sounds Bars	NR	NR	N/A	0	N/A	0
Consumer Electronics	Monitors	NR	NR	N/A	0	N/A	0
Miscellaneous	EV Chargers	NR	NR	N/A	0	N/A	0
	Total	NR	NR	N/A	2,544		1,577

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

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

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

Source: ComEd tracking data and evaluation team analysis

The Efficient Choice Pilot includes measures that save gas. Table 5-4 shows the measure-level gas savings.

Table 5-5. 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)
Appliance	Refrigerators	NR	N/A	0	0.63	0	17.0
Appliance	Electric Dryers	NR	N/A	0	0.61	0	16.0
Appliance	Washers	NR	N/A	1,700	0.62	1,054	14.0
Consumer Electronics	Televisions	NR	N/A	0	0.62	0	6.0
Appliance	Room Air Conditioners	NR	N/A	0	0.62	0	12.0
Appliance	Dishwashers	NR	N/A	25	0.62	16	11.0
Appliance	Air Purifiers	NR	N/A	0	0.62	0	9.0
Appliance	Freezers	NR	N/A	0	0.62	0	22.0
Appliance	Dehumidifier	NR	N/A	0	0.62	0	12.0
Consumer Electronics	Sound Bars	NR	N/A	0	0.62	0	4.0
Consumer Electronics	Monitors	NR	N/A	0	0.62	0	7.0
Miscellaneous	EV Chargers	NR	N/A	0	0.62	0	10.0
	Total Therms	NR	N/A	1,726		1,069.9	
	Total kWh Converted From Therms†	NR	N/A	50,577		31,357	

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

† 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 5-6 is combined savings from Table 5-2 and Table 5-5.

Table 5-6. Energy Savings by Measure – Total

End Use Type	Research Category	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)
Appliance	Refrigerators	NR	N/A	200,695	0.63	126,438
Appliance	Electric Dryers	NR	N/A	32,660	0.61	19,923
Appliance	Washers	NR	N/A	74,605	0.62	46,255
Consumer Electronics	Televisions	NR	N/A	15,415	0.62	9,557
Appliance	Room Air Condition	NR	N/A	1,604	0.62	994
Appliance	Dishwashers	NR	N/A	1,913	0.62	1,186
Appliance	Air Purifiers	NR	N/A	717	0.62	445
Appliance	Freezers	NR	N/A	513	0.62	318
Appliance	Dehumidifier	NR	N/A	379	0.62	235
Consumer Electronics	Sound Bars	NR	N/A	93	0.62	58
Consumer Electronics	Monitors	NR	N/A	91	0.62	56
Miscellaneous	EV Chargers	NR	N/A	43	0.62	27
	Total†	NR	N/A	328,728		205,492

N/A = not applicable (refers to a piece of data that cannot be produced or does not apply).

NR = not reported by ComEd.

* Researched values. Source: Research conducted in CY2021 as described in Appendix A and Appendix B.

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

Source: ComEd tracking data and evaluation team analysis

6. Impact Analysis Findings and Recommendations

The evaluation team developed several recommendations for ComEd based on findings from the CY2021 evaluation.

Finding 1. The Efficient Choice Pilot's energy savings can be evaluated using a survey-based approach. Guidehouse estimated 205.5 MWh of verified net energy savings in CY2021.

Recommendation 1. ComEd, the implementation team, and the evaluation team should discuss an appropriate evaluation methodology for Efficient Choice moving forward. Exploring a more prescriptive approach that relies on less frequently updated survey-based inputs coupled with readily available site traffic and engagement information could decrease evaluation costs and evaluation risk while increasing the predictability of Efficient Choice benefits and savings. However, there could also be a decrease in evaluation accuracy with a more prescriptive approach.

Finding 2. Approximately two-thirds of the surveyed customers indicated they received a ComEd rebate through the Appliance Rebates Program after visiting the Efficient Choice website. ComEd currently claims savings for customers through the Appliance Rebates Program. However, some customers may have learned about the Appliance Rebates Program through the Efficient Choice website; therefore, some savings currently claimed through the Appliance Rebates Program may potentially be claimed through the Efficient Choice website instead.

Recommendation 2. To understand the full energy savings of the Efficient Choice website, consider conducting further research to determine the percentage of customers that learned about the Appliance Rebates Program through the Efficient Choice website.

Appendix A. Impact Analysis Methodology

The primary evaluation goals are to determine the following:

1. If the savings from the ComEd Efficient Choice website can be evaluated.
2. If the ComEd Efficient Choice website can produce substantial claimable net energy savings.

Guidehouse fielded two waves of customer surveys to determine the evaluability of the pilot and if the Efficient Choice website could produce substantial claimable net savings. Guidehouse sent surveys to ComEd customers who visited specific measure pages on the Efficient Choice website. The surveys included questions to assess the purchase rate, efficiency rate, NTG ratio, and cross participation with the Appliance Rebates Program. Each survey began by asking if customers who visited the website made a purchase. Guidehouse used these responses to determine the purchase rate.³

Customers who indicated that they made a purchase were also asked to provide proof of purchase that clearly showed the make and model. Guidehouse reviewed the proofs of purchase to analyze the efficiency rate.⁴ Guidehouse also asked customers who made efficient purchases to answer NTG questions using the Prescriptive Rebate (With No Audit) Protocol (Section 4.4) from the IL-TRM.

Lastly, Guidehouse used the surveys to analyze cross participation. Surveyed customers who made an efficient purchase were asked if they received a rebate through the Appliance Rebates Program after visiting the Efficient Choice website. Measures overlapping between the ComEd Appliance Rebates Program and the Efficient Choice website are refrigerators, clothes washers, electric clothes dryers, air purifiers, dehumidifiers, and freezers.⁵ Guidehouse did not include savings from measures that flowed through the Appliance Rebates program in the savings attributed to the Efficient Choice pilot.

The survey findings combined with the engineering analysis and the number of active visitors were used to calculate verified gross savings and verified net savings using the following equations:

Equation A-1. Verified Gross and Verified Net Savings

Verified Gross Savings

$$= \text{Unit Energy Savings} \times \text{Active Visitors} \times \text{Purchase Rate} \times \text{Efficiency Rate} \\ - \text{Cross Participation}$$

$$\text{Verified Net Savings} = \text{Verified Gross Savings} \times \text{Net to Gross Ratio}$$

³ The purchase rate is the percentage of survey takers who self-reported making a purchase after visiting the website.

⁴ The efficiency rate is the ratio of efficient purchases as determined by the IL-TRM relative to the total number of purchases.

⁵ "Appliance Rebates," ComEd, <https://www.comed.com/WaysToSave/ForYourHome/Pages/ApplianceRebates.aspx>.

A.1 Sampling Plan

Guidehouse used a nested sampling approach to characterize the statistical significance of the verified gross savings results. The first stage of this approach included developing a sample frame of all customers who performed a search on the ComEd Efficient Choice website. The second stage of the nested sample approach included all survey respondents of the first stage who purchased equipment and was then used to estimate the percentage of efficient equipment purchased. By multiplying the purchase rate, the percentage of efficient purchases, and the total population, Guidehouse determined the total number of efficient purchases made.

During the sample planning, Guidehouse estimated requiring 50 proofs of purchase per measure to evaluate each measure at 90/40.^{6,7} Based on this determination, ComEd decided to focus the marketing activities for this pilot on refrigerator, clothes washer, and electric clothes dryer measures to obtain sufficient proofs of purchase to evaluate each measure at 90/40 and the pilot at 90/25.

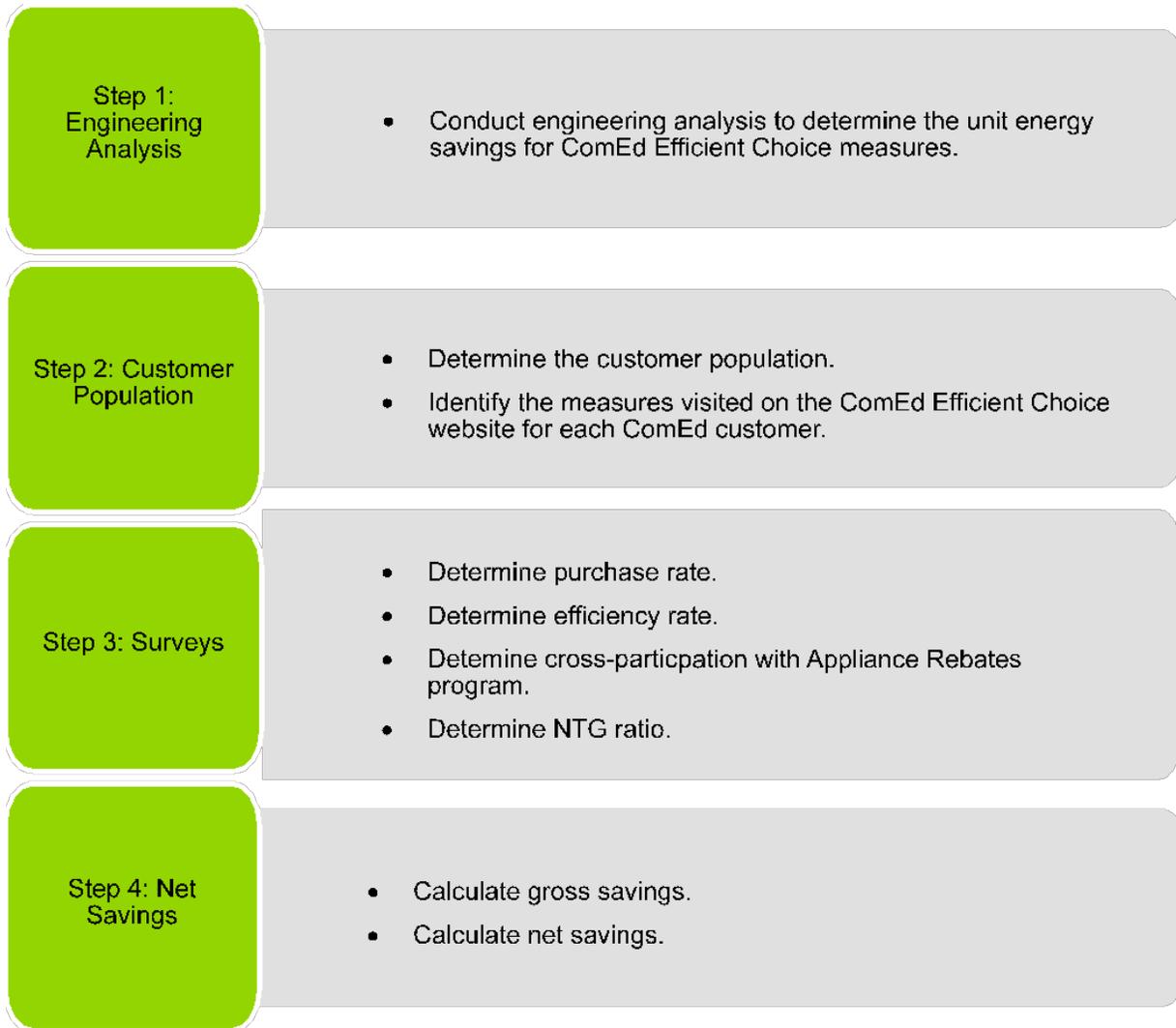
Guidehouse emailed a link to an evaluation survey to customers who visited refrigerator, electric clothes dryer, or clothes washer pages on the website. The evaluation team then calculated average purchase rates, efficiency rates, and NTG ratios for refrigerators, clothes washers, and electric clothes dryers to estimate the savings for the other measures on the Efficient Choice website.

Figure A-1 summarizes the evaluation methodology. Additional details for each step are described in Sections A.2 through A.4.

⁶ All of the confidence and relative precision values shown are in the format “confidence/relative precision.” All confidence and precision levels are for a two-tailed confidence interval.

⁷ ComEd programs are typically evaluated using a 90/10 confidence and relative precision. However, Guidehouse does not believe it is feasible to achieve the standard statistical requirements of 90/10 for this pilot’s evaluation.

Figure A-1. Evaluation Approach for Efficient Choice Pilot



Source: Guidehouse analysis

A.2 Engineering Analysis

Guidehouse developed unit energy savings (UES) using the IL-TRM.⁸ If a measure was not included in the IL-TRM, the team reviewed the Michigan Energy Measures Database (MEMD)⁹

⁸ The TRM is the Illinois Statewide Technical Reference Manual version 9.0 from <http://www.ilsag.info/technical-reference-manual.html>.

⁹ "Michigan Energy Measures Database," Michigan.gov, https://www.michigan.gov/mpsc/0,9535,7-395-93309_94801_94808_94811---,00.html.

and the Mid-Atlantic Technical Reference Manual version 10.¹⁰ Table A-1 summarizes the UES used for this evaluation.

Table A-1. UES for Evaluated Measures

Energy Savings (kWh/unit)	Peak Demand Savings (kW/unit)	Gas Savings (therm/unit)	Secondary Water Savings (kWh/unit)	Source
321.06	0.05	0.00	0.00	Section 5.1.8 of IL TRM
160.00	0.02	0.00	0.00	Section 5.1.10 of IL TRM
67.03	0.01	4.60	6.78	Section 5.1.2 of IL TRM
149.90	0.13	0.00	0.00	Michigan MEMD
17.70	0.02	0.00	0.00	Section 5.1.7 of IL TRM
18.15	0.00	0.39	0.63	Section 5.1.4 of IL TRM
158.75	0.02	0.00	0.00	Section 5.1.1 of IL TRM
43.78	0.01	0.00	0.00	Section 5.1.5 of IL TRM
131.67	0.03	0.00	0.00	Section 5.1.3 of IL TRM
29.80	0.00	0.00	0.00	Michigan MEMD
44.00	0.00	0.00	0.00	Mid-Atlantic TRM V10
21.10	-0.28	0.00	0.00	Section 5.5.3 of IL TRM

Source: Evaluation team analysis

For refrigerators, Guidehouse calculated the weighted unit energy savings based on early replacement (ER) and replacement on burnout (ROB) baseline conditions. ROB electric savings are 65 kWh per unit, and ER electric savings are 506 kWh per unit for refrigerators per the IL-TRM. The share of ER was 58% and the share of ROB was 42%, which was determined through the customer surveys.

Guidehouse conducted a similar analysis for electric clothes dryers and clothes washers and found that the savings for ER and ROB conditions are the same.

A.3 Customer Population

The customer population is defined as the count of unique customer unit identifiers (CUIDs) by measure. The implementer tracks searching behaviors on the Efficient Choice website by CUIDs by measure. Customers were included as part of the customer population if they took at least one of the following active searching actions on the website:

- Filtered product lists
- Sorted product lists
- Saved a product search
- Favorited a product

¹⁰ *Mid-Atlantic Technical Reference Manual (TRM) V10*, Northeast Energy Efficiency Partnerships, May 27, 2020, <https://neep.org/mid-atlantic-technical-reference-manual-trm-v10>.

- Selected a product
- Compared products (two distinct actions)
- Clicked on an offer
- Engaged with product recommendations
- Engaged with histogram

The implementer provided email addresses that Guidehouse used for evaluation surveys if available. The count of unique CUIDs by measure is summarized in Table 5-1.

A.4 Surveys

The emailed survey links aimed to collect information to determine the purchase rate, the efficiency rate, the NTG ratio, and the cross-participation with the Appliance Rebates Program. In the surveys, Guidehouse asked customers whether they made a purchase within the measure category that they visited on the ComEd Efficient Choice website. For example, if a customer interacted with a refrigerator page on the ComEd Efficient Choice website, the evaluation team asked this customer if they purchased a refrigerator after visiting the website.

The purchase rate was calculated as follows:

Equation A-2. Purchase Rate

$$\text{Purchase rate} = \frac{\text{Number of self reported purchases}}{\text{Total Survey responses}}$$

Guidehouse offered a \$25 incentive for the customer to email a copy of the provide proof of purchase for customers who self-reported their purchased equipment. Acceptable proof of purchase included a receipt indicating make and model or a picture of the nameplate that indicates the make and model and the date of manufacture. The evaluation team reviewed all proofs of purchase to determine whether the purchase was baseline or efficient. An efficient purchase was defined as a model that meets or exceeds the efficiency criteria in the IL-TRM. Guidehouse calculated the efficiency rate as follows:

Equation A-3. Efficiency Rate

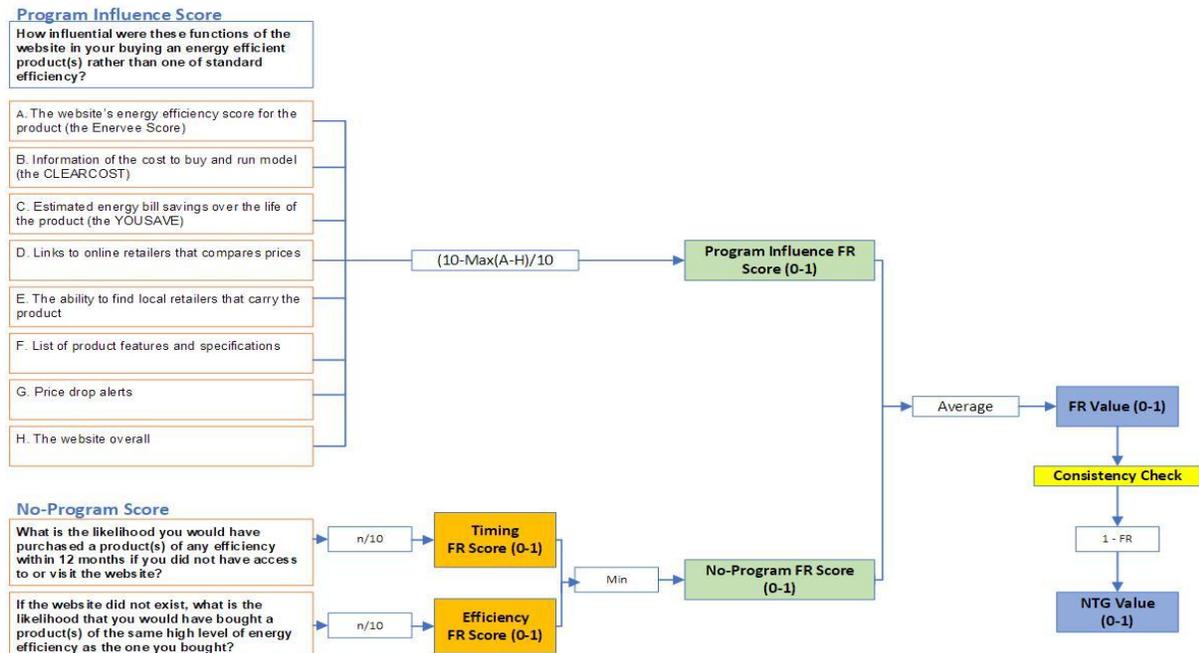
$$\text{Efficiency rate} = \frac{\text{Number of verified efficient purchases}}{\text{Total number of Receipts and Pictures Received}}$$

After visiting the Efficient Choice website, surveyed customers who made an efficient purchase were asked if they received a rebate through the Appliance Rebates Program. The evaluation team excluded savings for customers who indicated making an efficient purchase and receiving a rebate through the Appliance Rebates Program from the Efficient Choice Pilot savings.

Lastly, Guidehouse used the surveys to inform the NTG ratio. The evaluation team used the Prescriptive Rebate (With No Audit) Protocol (Section 4.4) from the IL-TRM. A flow chart of this protocol is shown in Figure A-2. Guidehouse and ComEd staff performed an in-depth review of

this method and determined it to be the most appropriate protocol for the ComEd Efficient Choice website evaluation. Other approved NTG methodologies from the IL-TRM were considered, such as the Energy Saving Kits and Elementary Education Protocol (Section 4.7). However, these methods did not fit the needs of the evaluation due to the variation in program delivery.

Figure A-2. ComEd Efficient Choice Evaluation Using Prescriptive Rebate (with No Audit) Protocol



Source: IL-TRM, Section 4.4 Prescriptive Rebate (With No Audit) Protocol

Appendix B. Impact Findings Detailed Results

Table B-1 summarizes the key results from the surveys.¹¹

Table B-1. Survey Results by Measure

	Metric	Refrigerators	Clothes Washers	Clothes Dryers	Total
Purchase Rate	Total Survey Responses	1,143	690	485	2,318
	Number of Self-Reported Purchases	103	94	42	239
	Weighted Purchase Rate*	9.7%	13.0%	8.4%	10.0%
Efficiency Rate (Without Removing Cross-Participation)	Proof of Purchase Received	44	38	15	97
	Number of Efficient Purchases	37	29	9	75
	Weighted Efficiency Rate*	88.1%	75.8%	70.2%	84.7%
Efficiency Rate (Removing Cross-Participation)	Proof of Purchase Received	44	38	15	97
	Number of Efficient Purchases	11	10	4	25
	Weighted Efficiency Rate*	27.3%	26.2%	28.4%	27.3%
NTG Ratio (Removing Cross Participation)	Free Ridership	0.37	0.38	0.39	0.37
	NTG Ratio	0.63	0.62	0.61	0.63

* Guidehouse conducted two rounds of surveys to evaluate purchase rate. Guidehouse combined the results for both surveys by multiplying the purchase rate for each survey by the population weighted savings for each survey wave. This method gives more weight to the purchase rate for the survey wave that has a higher population weighted savings. This table presents combined results for survey wave 1 and 2, therefore the combined purchase rate does not equal the simple division of number of self-reported purchases divided by total survey responses. The same holds for the efficiency rate.

Source: Evaluation team analysis

B.1 Verified Net Savings

Verified electric and gas energy savings and electric demand savings can be determined using the following equation for each measure:

Equation B-1. Verified Gross Savings

$$\begin{aligned}
 \text{Verified Gross Savings} &= \text{Unit Energy Savings} \times \text{Active Visitors} \times \text{Purchase Rate} \times \text{Efficiency Rate} \\
 &\quad - \text{Cross Participation}
 \end{aligned}$$

¹¹ ComEd Efficient Choice Pilot Evaluation Findings Memo”, sent to ComEd November 30, 2021.

Guidehouse calculated verified net savings for each measure using the following equation:

Equation B-2. Verified Net Savings

$$\text{Verified Net Savings} = \text{Verified Gross Savings} \times \text{Net to Gross Ratio}$$

Table B-2 includes the key measure-level inputs used to develop the savings estimate removing cross-participation.

Table B-2. Summary Inputs for Savings Calculations by Measure

Measures	Annualized Customer Population	Energy Savings (kWh/unit)	Peak Demand Savings (kW/unit)	Gas Savings (therm/unit)	Purchase Rate	Efficiency Rate	NTG Ratio
Refrigerators	23,620	321.06	0.05	0.00	9.7%	27.3%	0.63
Electric Dryers	8,550	160.00	0.02	0.00	8.4%	28.4%	0.61
Washers	10,834	67.03	0.01	4.60	13.0%	26.2%	0.62
Televisions	1,212	149.90	0.13	0.00	10.0%	84.7%	0.63
Room Air Conditioners	1,068	17.70	0.02	0.00	10.0%	84.7%	0.63
Dishwashers	759	18.15	0.00	0.39	10.0%	84.7%	0.63
Air Purifiers	165	158.75	0.02	0.00	10.0%	27.3%	0.63
Freezers	428	43.78	0.01	0.00	10.0%	27.3%	0.63
Dehumidifiers	105	131.67	0.03	0.00	10.0%	27.3%	0.63
Sound Bars	25	44.00	0.00	0.00	10.0%	84.7%	0.63
Monitors	36	29.80	0.00	0.00	10.0%	84.7%	0.63
EV Chargers	24	21.10	-0.28	0.00	10.0%	84.7%	0.63

Source: Evaluation team analysis

For measures that were not surveyed and overlap with the ComEd Appliance Rebates Program, the evaluation team applied the average efficiency rate of 27.3% and the average NTG value of 0.63. These include refrigerators, clothes washers, electric clothes dryers, air purifiers, dehumidifiers, and freezers. The team applied the efficiency rate without removing the cross-participation of 84.7% for measures not offered through the ComEd Appliance Rebates Program.

Appendix C. Total Resource Cost Detail

Table C-1 shows the TRC cost-effectiveness analysis inputs available at the time of finalizing this impact evaluation report. This table does not include additional required cost data (e.g., measure costs, pilot-level incentives, and non-incentive costs). ComEd will provide this data to the evaluation team later.

Table C-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)
Appliance	Refrigerators	Each	23,620	17.0	NO	200,695	30.24	0	0	0	0	0.63	N/A	N/A	126,438	19.05	0	0	0	0
Appliance	Electric Dryers	Each	8,550	16.0	NO	32,660	4.39	0	0	0	0	0.61	N/A	N/A	19,923	2.68	0	0	0	0
Appliance	Washers	Each	10,834	14.0	NO	22,269	2.86	1,700	2,504	0	0	0.62	N/A	N/A	13,807	1.78	1,054	1,553	0	0
Consumer Electronics	Televisions	Each	1,212	6.0	NO	15,415	13.29	0	0	0	0	0.62	N/A	N/A	9,557	8.24	0	0	0	0
Appliance	Room Air Conditioners	Each	1,068	12.0	NO	1,604	1.90	0	0	0	0	0.62	N/A	N/A	994	1.18	0	0	0	0
Appliance	Dishwashers	Each	759	11.0	NO	1,128	0.08	25	40	0	0	0.62	N/A	N/A	700	0.05	16	25	0	0
Appliance	Air Purifiers	Each	165	9.0	NO	717	0.08	0	0	0	0	0.62	N/A	N/A	445	0.05	0	0	0	0
Appliance	Freezers	Each	428	22.0	NO	513	0.08	0	0	0	0	0.62	N/A	N/A	318	0.05	0	0	0	0
Appliance	Dehumidifiers	Each	105	12.0	NO	379	0.09	0	0	0	0	0.62	N/A	N/A	235	0.05	0	0	0	0
Consumer Electronics	Sound Bars	Each	25	4.0	NO	93	0.00	0	0	0	0	0.62	N/A	N/A	58	0.00	0	0	0	0
Consumer Electronics	Monitors	Each	36	7.0	NO	91	0.01	0	0	0	0	0.62	N/A	N/A	56	0.01	0	0	0	0
Miscellaneous	EV Chargers	Each	24	10.0	NO	43	-0.57	0	0	0	0	0.62	N/A	N/A	27	-0.35	0	0	0	0
Total				15.9		275,607	52	1,726	2,544	0	0				172,557	33	1,070	1,577	0	0

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.

† ER measures are flagged as YES, otherwise a NO is indicated in the column.

Source: Evaluation team analysis