NAVIGANT

ComEd Appliance Rebates Combined Evaluation Report

Energy Efficiency / Demand Response Plan: Plan Year 9 (PY9)

Presented to
ComEd

February 14, 2019

Prepared by:

Navigant

www.navigant.com

NAVIGANT

ComEd Appliance Rebates Combined Evaluation Report

Submitted to:

ComEd
Three Lincoln Centre
Oakbrook Terrace, IL 60181

Submitted by:

Navigant Consulting, Inc.
150 N. Riverside, Suite 2100
Chicago, IL 60606

Contact:

Randy Gunn, Managing Director	Jeff Erickson, Director	Patricia Plympton, Associate Director
312.583.5714	608.497.2322	202.253.9356
Randy.Gunn@Navigant.com	Jeff.Erickson@Navigant.com	Patricia.Plympton@Navigant.com

TABLE OF CONTENTS

1. INTRODUCTION

This report combines the key deliverables from the evaluation of the Appliance Rebates Program for PY9. Each of these deliverables were drafted, reviewed and finalized during the course of the PY9 evaluation.

APPENDIX A. COMED PY9 APPLIANCE REBATE PROGRAM IMPACT EVALUATION REPORT 2018-05-02 FINAL

NAVIGANT

ComEd Appliance Rebates Program Impact Evaluation Report

Energy Efficiency / Demand Response Plan: Plan Year 9 (PY9)

Presented to
ComEd

FINAL

May 2, 2018

Prepared by:

Laura Agapay-Read
Navigant Consulting, Inc.

Jennifer Ma
Navigant Consulting, Inc.

www.navigant.com

NAVIGANT

ComEd Appliance Rebates Program Impact Evaluation Report

Submitted to:

ComEd
Three Lincoln Centre
Oakbrook Terrace, IL 60181

Submitted by:

Navigant Consulting, Inc.
150 N. Riverside, Suite 2100
Chicago, IL 60606

Contact:

Randy Gunn, Managing Director	Jeff Erickson, Director	Patricia Plympton, Associate Director
312.583.5714	608.497.2322	202.253.9356
Randy.Gunn@Navigant.com	Jeff.Erickson@Navigant.Com	Partricia.Plympton@Navigant.com

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

1. INTRODUCTION

This report presents the results of the impact evaluation of ComEd's PY9 Appliance Rebates Program (ARP). It presents a summary of the energy and demand impacts for the total program and broken out by relevant measure and program structure details. The appendix presents the impact analysis methodology. PY9 covers June 1, 2016 through December 31, 2017.

2. PROGRAM DESCRIPTION

The Appliance Rebates program is designed to increase the market share of ENERGY STAR® appliances sold through retail (in-store or online) sales channels by providing rebates to decrease customer costs, as well as information and education to increase customer awareness and acceptance of energy efficient appliances. The program targets residential customers who purchase new or replacement ENERGY STAR® appliances including air purifiers, clothes washers, electric dryers, freezers, heat pump water heaters, refrigerators, and variable speed pool pumps. New to the program in PY9 are room air conditioners, water dispensers, smart thermostats, bathroom ventilation fans, and Tier 1 advanced power strips.

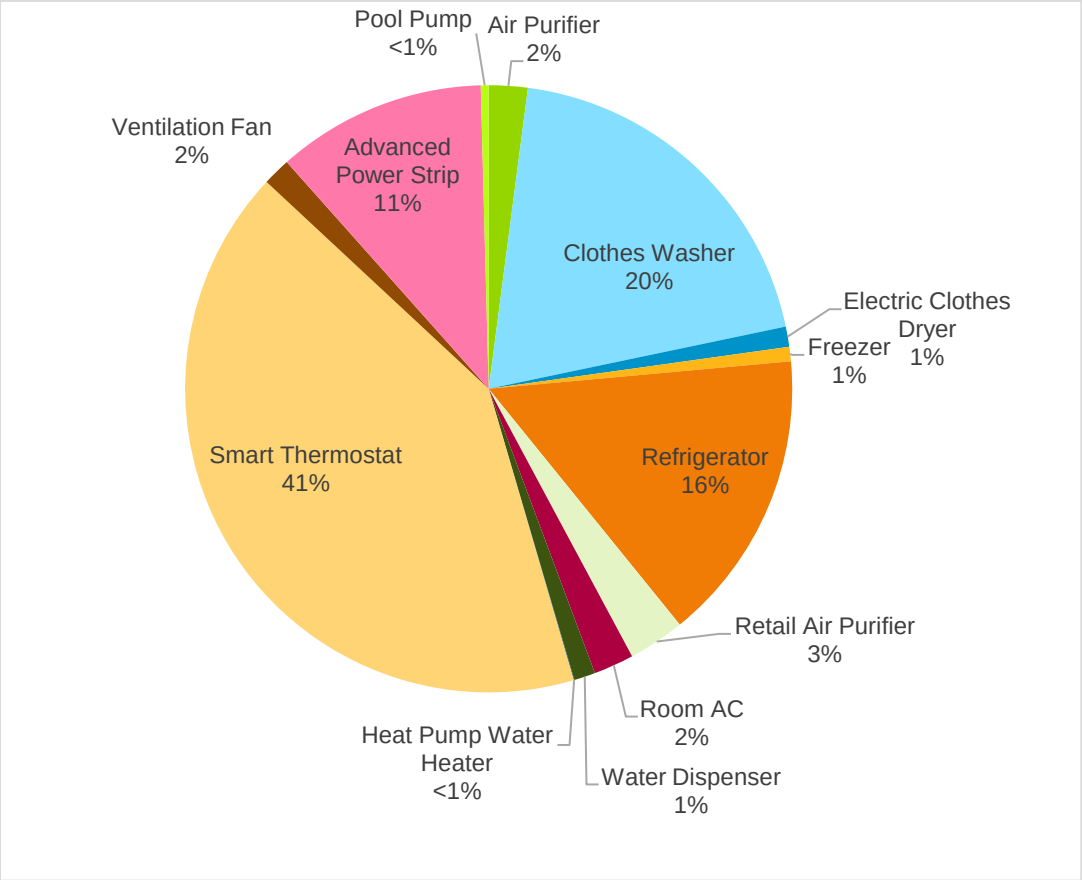
The program had 164,113 participants in PY9, completed 192,084 projects, and distributed 228,774 measures as shown in the following table and graph.

Table 2-1. PY9 Volumetric Findings Detail

Participation	PY9 Results
Participants*	164,113
Projects†	192,084
Measures Installed	228,774
Average Units/Project	1.2
Air Purifier	4,732
Clothes Washer	44,944
Electric Clothes Dryer	2,461
Freezer	1,754
Refrigerator	35,698
Retail Air Purifier	6,879
Room AC	4,896
Water Dispenser	2,591
Heat Pump Water Heater	83
Smart Thermostat	94,844
Ventilation Fan	3,401
Advanced Power Strip	25,542
Pool Pump	949

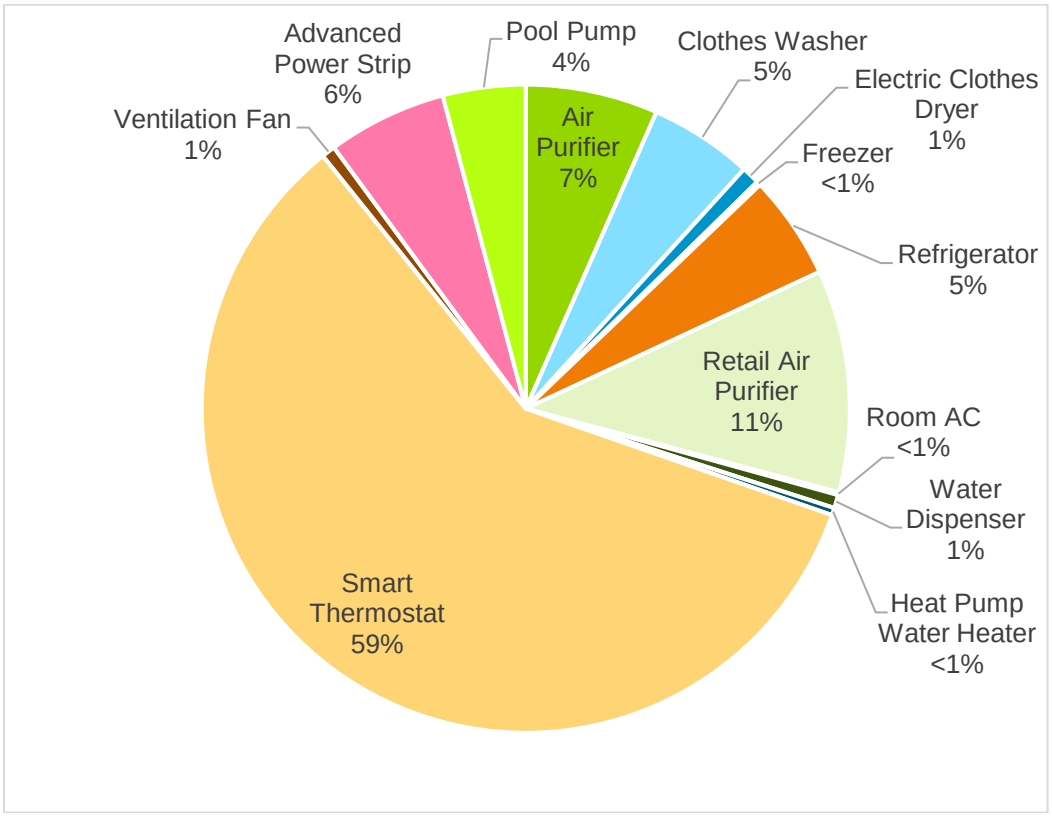
* Participants are defined as unique ComEd Account Numbers
† Projects are defined as unique Rebate IDs
Source: ComEd tracking data and Navigant team analysis.

Figure 2-1. Distribution of Measures Installed by Type



Source: Evaluation analysis.

Figure 2-2. Distribution of Verified Gross Savings by Type



Source: Evaluation analysis.

3. Program Savings

Table 3-1 summarizes the incremental energy and demand savings the Appliance Rebates Program achieved in PY9.

Table 3-1. PY9 Total Annual Incremental Savings

Savings Category	Energy Savings (kWh)	Demand Savings (kW)	Peak Demand Savings (kW)
Ex Ante Gross Savings	44,575,051	NA	14,239
Program Gross Realization Rate	99%	NA	71%
Verified Gross Savings	44,175,293	42,254	10,103
Program Net-to-Gross Ratio (NTGR)	Varies	Varies	Varies
Verified Net Savings	40,742,799	38,896	9,673

Source: ComEd tracking data and Navigant team analysis.

4. Program Savings by Measure

The program includes 13 measures as shown in the following tables. Smart thermostats contributed the most savings (59 percent of total verified gross savings for the program).

Table 4-1. PY9 Energy Savings by Measure

End Use Type	Research Category	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTGR*	Verified Net Savings (kWh)	Technical Measure Life	Persistence	Effective Useful Life (EUL)†
Appliances	Air Purifier	2,919,401	100%	2,918,720	0.78	2,276,602	NA	NA	9
Appliances	Clothes Washer	2,276,612	100%	2,276,612	0.68	1,548,096	NA	NA	14
Appliances	Electric Clothes Dryer	398,580	100%	398,581	0.68	271,035	NA	NA	14
Appliances	Freezer	86,648	100%	86,648	0.86	74,517	NA	NA	11
Appliances	Refrigerator	2,299,676	100%	2,299,676	0.86	1,977,721	NA	NA	12
Appliances	Retail Air Purifier	5,284,587	93%	4,900,277	0.78	3,822,216	NA	NA	9
Appliances	Room AC	61,200	100%	61,200	0.80	48,960	NA	NA	12
Appliances	Water Dispenser	293,172	100%	293,172	0.80	234,537	NA	NA	10
Hot Water	Heat Pump Water Heater	168,619	96%	162,230	0.86	139,518	NA	NA	13
HVAC	Smart Thermostat	26,030,784	100%	26,022,405	NA‡	26,022,405	NA	NA	10
HVAC	Ventilation Fan	301,329	100%	301,329	0.80	241,063	NA	NA	19
Electronics	Advanced Power Strip	2,630,826	100%	2,630,826	0.86	2,262,510	NA	NA	4
Misc	Pool Pump	1,823,617	100%	1,823,617	1.00	1,823,617	NA	NA	10
	Total§	44,575,051	99%	44,175,293	Varies	40,742,799			

* A deemed value. Source: ComEd_NTG_History_and_PY9_Recommendations_2016-02-26_Final.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
† EUL is a combination of technical measure life and persistence.
‡ The IL TRM algorithm calculates net savings for smart thermostats.
§ Values do not sum exactly due to rounding.
Source: ComEd tracking data and Navigant team analysis.

Table 4-2. PY9 Demand Savings by Measure

End Use Type	Research Category	Ex Ante Gross Demand Reduction (kW)*	Verified Gross Realization Rate	Verified Gross Demand Reduction (kW)	NTGR†	Verified Net Demand Reduction (kW)
Appliances	Air Purifier	NA	NA	499	0.78	390
Appliances	Clothes Washer	NA	NA	7,638	0.68	5,194
Appliances	Electric Clothes Dryer	NA	NA	1,408	0.68	958
Appliances	Freezer	NA	NA	15	0.86	13
Appliances	Refrigerator	NA	NA	262	0.86	226
Appliances	Retail Air Purifier	NA	NA	839	0.78	654
Appliances	Room AC	NA	NA	277	0.80	222
Appliances	Water Dispenser	NA	NA	34	0.80	27
Hot Water	Heat Pump Water Heater	NA	NA	64	0.86	55
HVAC	Smart Thermostat	NA	NA	29,366	NA‡	29,366
HVAC	Ventilation Fan	NA	NA	34	0.80	27
Electronics	Advanced Power Strip	NA	NA	366	0.86	315
Misc	Pool Pump	NA	NA	1,451	1.00	1,451
	Total§	NA	NA	42,254	Varies	38,896

* The implementer did not report ex ante gross demand reduction.
† A deemed value. Source: ComEd_NTG_History_and_PY9_Recommendations_2016-02-26_Final.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
‡ The IL TRM algorithm calculates net savings for smart thermostats.
§ Values do not sum exactly due to rounding.
Source: ComEd tracking data and Navigant team analysis.

Table 4-3. PY9 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)	NTGR*	Verified Peak Net Demand Reduction (kW)
Appliances	Air Purifier	333	100%	333	0.78	260
Appliances	Clothes Washer	290	100%	290	0.68	197
Appliances	Electric Clothes Dryer	54	100%	54	0.68	37
Appliances	Freezer	14	100%	14	0.86	12
Appliances	Refrigerator	345	100%	347	0.86	298
Appliances	Retail Air Purifier	603	93%	559	0.78	436
Appliances	Room AC	83	100%	83	0.80	67
Appliances	Water Dispenser	34	100%	34	0.80	27
Hot Water	Heat Pump Water Heater	8	96%	8	0.86	7
HVAC	Smart Thermostat	10,691	64%	6,842	NA†	6,842
HVAC	Ventilation Fan	34	100%	34	0.80	27
Electronics	Advanced Power Strip	297	100%	298	0.86	256
Misc	Pool Pump	1,451	83%	1,206	1.00	1,206
	Total‡	14,239	71%	10,103	Varies	9,673

* A deemed value. Source: ComEd_NTG_History_and_PY9_Recommendations_2016-02-26_Final.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
† The IL TRM algorithm calculates net savings for smart thermostats.
‡ Values do not sum exactly due to rounding.
Source: ComEd tracking data and Navigant team analysis.

5. Impact Analysis Findings and Recommendations

5.1 Impact Parameter Estimates

Navigant calculated verified gross and net program impacts for 13 measures: Air Purifier, Clothes Washer, Electric Clothes Dryer, Freezer, Refrigerator, Retail Air Purifier, Room AC, Water Dispenser, Heat Pump Water Heater, Smart Thermostat, Ventilation Fan, Advanced Power Strip, and Pool Pump. These measures account for all quantifiable PY9 electric savings.

Navigant calculated verified gross energy and demand savings using the algorithms in the Illinois TRM, version 5 and Illinois TRM, version 6 where appropriate. The following table presents the deemed input parameter source that Navigant used by measure. The Illinois TRM v5.0 allows for custom or actual values to be used for some of the input parameters. Navigant based these values on the program tracking database when available.

Navigant calculated verified net energy and demand (coincident peak and overall) savings by multiplying the verified gross savings estimates by a net-to-gross ratio (NTGR). In PY9, SAG defined NTGR estimates used to calculate net verified savings[1].

[1] ComEd_NTG_History_and_PY9_Recommendations_2016-02-26_Final.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html

Table 5-1. Verified Gross Savings Parameters

Research Category	Ex Ante Gross Savings (kWh/unit)	Deemed or Evaluated?	Source
Quantity	Varies	Evaluated	Program tracking data
NTGR	Varies	Deemed	IL SAG Consensus*
Air Purifier	Varies	Deemed	IL TRM v5.0 - Section 5.1.1†
Clothes Washer	Varies	Deemed	IL TRM v5.0 - Section 5.1.2†
Electric Clothes Dryer	Varies	Deemed	IL TRM v5.0 - Section 5.1.10†
Freezer	Varies	Deemed	IL TRM v5.0 - Section 5.1.5†
Refrigerator	Varies	Deemed	IL TRM v5.0 - Section 5.1.6†
Retail Air Purifier	Varies	Deemed	IL TRM v5.0 - Section 5.1.1†
Room AC	12.5	Deemed	Implementer Documentation and IL TRM v5.0 – Section 5.1.7†
Water Dispenser	113	Deemed	Implementer Documentation and IL TRM v6.0 – Section 5.1.11†
Heat Pump Water Heater	Varies	Deemed	IL TRM v5.0 - Section 5.4.3†
Smart Thermostat	Varies	Deemed	IL TRM v5.0 - Section 5.3.16†
Ventilation Fan	88.6	Deemed	IL TRM v5.0 - Section 5.3.9†
Advanced Power Strip	103	Deemed	IL TRM v5.0 - Section 5.2.1†
Pool Pump	1921	Deemed	IL TRM v6.0 - Section 5.7.1†

* Source ComEd_NTG_History_and_PY9_Recommendations_2016-02-26_Final.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html
† State of Illinois Technical Reference Manual from http://www.ilsag.info/technical-reference-manual.html.

5.2 Other Impact Findings and Recommendations

Verified Gross Impacts and Realization Rate

Finding 1. The PY9 Appliance Rebates program achieved 44,175,293 kWh of verified gross energy savings, 42,254 kW of verified gross demand reduction, and 10,103 kW of verified gross peak demand reduction. The overall verified gross program realization rate for energy savings is 99 percent and the verified gross program realization rate for peak demand savings is 71 percent. The realization rates for gross demand savings is NA as the implementer did not track gross demand reduction.

Recommendation 1. Navigant recommends that the implementer track gross demand reduction.

Finding 2. At the measure level, Navigant's estimates for energy savings produced some variability in realization rate. Impact analysis details are included in Section 6 (Appendix 1).

Recommendation 2. Navigant recommends that the implementation contractor consistently use the TRM deemed inputs and algorithm for retail air purifiers or provide additional information and calculators for deviations from the TRM.

Recommendation 3. Navigant recommends that the implementation contractor and Navigant conduct early reviews for all newly introduced measures.

Recommendation 4. Navigant recommends the implementer provide additional assumptions regarding deviations from the TRM for the location factor variable or use TRM deemed unknown value for the "location factor (LF)" when the location is unknown.

Recommendation 5. Navigant recommends the implementer use CF_{PJM} instead of CF_{SSP} to calculate coincident peak demand savings for smart thermostats.

Recommendation 6. For smart thermostats, Navigant recommends (1) that the implementer does not claim peak demand savings for homes without central air conditioning. (2) that the implementer applies TRM deemed values for EER and SEER based on the air conditioning type.

Recommendation 7. Navigant recommends the implementer apply the 65 percent MF household factor to the size of the AC unit for all MF homes.

Recommendation 8. Navigant recommends the implementer track and report building types to allow more accurate application of TRM parameters i.e. multi-family verses single-family household factor.

Recommendation 9 Navigant recommends the implementer use TRM v6.0 deemed demand savings values for pool pumps.

Verified Net Impacts and NTGR

Finding 3. The evaluation used varying deemed net-to-gross (NTG) values depending on the measure to calculate verified net savings of 40,742,799 kWh, verified net demand reduction of 38,986 kW and verified net peak demand reduction of 9,673 kW.

6. Appendix 1. Impact Analysis Detail

6.1.1 Retail Air Purifier

For retail air purifiers, Navigant and the implementer used the measure level inputs deemed by the IL TRM v5.0 to calculate energy savings. The realization rate for energy and demand for retail air purifiers is 93 percent. For 679 out of 5,462 projects, the discrepancy for retail air purifiers is due to a mismatch between the Clean Air Delivery Rate (CADR) and deemed savings values. For these projects, the implementer listed a CADR value between 110 and 210; however, ex ante savings correspond to CADR values 250 and above. Rebate ID EA-0000079525 and EA-0000079441 are examples of this. For 243 projects, the implementer used savings which are different from the savings that the TRM outlines. The realization rate for retail air purifiers at the unit level for those projects ranged from 92 percent to 270 percent. Rebate ID RBT-1149967 and RBT-1149971 are examples of this. These instances are largely isolated to certain dates, specifically invoice approvals on 1/9/2017, 8/28/2017, or 9/18/2017.

Recommendation 2. Navigant recommends that the implementation contractor consistently use the TRM deemed inputs and algorithm for retail air purifiers or gives additional information and calculators for deviations from the TRM.

6.1.2 Water Dispenser

For water dispensers, Navigant provided an early review of the values used by the implementer and documented findings in a memo[2]. Based on this early review, Navigant determined that the implementer's workpaper values are reasonable. The realization rate for this measure is 100 percent.

Recommendation 3. Navigant recommends that the implementation contractor and Navigant conduct early reviews for all newly introduced measures.

[2] ComEd Appliance Rebates Water Cooler Review, 2016-08-17.

6.1.3 Heat Pump Water Heaters

For heat pump water heaters, Navigant used the measure level inputs deemed by the IL TRM v5.0 to calculate energy savings. There is a difference of approximately four percent between reported and verified energy and demand savings. The differences are due to multiple algorithm inputs used by the implementer that did not match the inputs defined in the TRM. Navigant determined that the implementer used a value for the "location factor (LF)" input not in the TRM, while the TRM deems 0.5 for HPWHs installed in an unknown location.

> **Recommendation 4.** Navigant recommends the implementer provide additional assumptions regarding deviations from the TRM for the location factor variable or use TRM deemed unknown value for the "location factor (LF)" when the location is unknown.

6.1.4 Smart Thermostats

For smart thermostats, Navigant and the implementer used the measure level inputs deemed by the IL TRM v5.0 to calculate energy savings. The energy saving realization rate for smart thermostats is 100 percent and the coincident peak demand realization rate is 64 percent. The primary reason for the difference in peak demand savings was Navigant calculated coincident peak demand savings using CF_{PJM} while the implementer used CF_{SSP}. Navigant used CF_{PJM} to support ComEd's PJM compliance requirements.

> **Recommendation 5.** Navigant recommends the implementer use CF_{PJM} instead of CF_{SSP} to calculate coincident peak demand savings for smart thermostats.

Navigant also found discrepancies for projects at homes without central air conditioning that affected peak demand savings. The following is the equation for smart thermostat peak demand savings:

$$\Delta kW = (Cooling\_Reduction * Btu/hr * (1/EER))/1000 * EFF\_ISR * CF$$

Deemed values of EER or Energy Efficiency Ratio of existing cooling system is dependent on the presence and type of air conditioning in the home. The types of air conditioning may be air source heat pump or central AC cooling systems. The implementer tracked each home's heating and cooling system in the field "HVAC_System_Type." For 882 projects, the implementer reported demand savings for homes that did not having air conditioning according to the "HVAC_System_Type" field. Navigant calculate no demand savings for the same projects which resulted in a unit level peak demand realization rate of zero percent for those projects.

For 222 projects, the "HVAC_System_Type" indicated the home had central air conditioning, but the implementer calculated peak demand savings using the EER value for air source heat pump. Navigant calculated peak demand savings using the EER value for central air conditioning. The unit level peak demand realization rate was 105% for those projects. Treating homes with central air conditioning as homes with air source heat pumps affected energy savings as well by changing the input SEER, or Seasonal Energy Efficiency Ratio of existing cooling system; however, this did not change the energy savings realization rate.

> **Recommendation 6.** For smart thermostats, Navigant recommends (1) that the implementer does not claim peak demand savings for homes without central air conditioning. (2) that the implementer applies TRM deemed values for EER and SEER based on the air conditioning type.

Lastly, the TRM deems a value of 33,600 for Btu/hr, or the size of AC unit, for single-family homes, but does not deem a value for multi-family homes. The implementer used 21,840 Btu/hr for multi-family

homes, the result of multiplying the single-family home value by the 65 percent multi-family household factor. Navigant agreed this was acceptable and applied the same 65 percent multi-family household factor. For 224 multi-family projects, the implementer did not apply the 65 percent household factor, and the unit level peak demand realization rate for those projects was 65 percent.

Recommendation 7. Navigant recommends the implementer apply the 65 percent multi-family household factor to the size of the AC unit for all multi-family homes.

Recommendation 8. Navigant recommends the implementer track and report building types to allow more accurate application of TRM parameters i.e. multi-family verses single-family household factor.

6.1.5 Pool Pump

Because the TRM v5.0 does not define savings for pool pumps, Navigant used the measure level inputs deemed by the TRM v6.0[3] to calculate energy savings. The realization rate for pool pump energy savings is 100 percent. Navigant found a moderate difference between reported and verified demand savings of approximately 17 percent. This difference is because implementer used the demand savings value from their pool pumps measure workpaper, and Navigant used the TRM deemed value.

Recommendation 9. Navigant recommends the implementer use TRM v6.0 deemed demand savings values for pool pumps.

7. APPENDIX 2. TOTAL RESOURCE COST DETAIL

Table 7-1, below, shows the Total Resource Cost (TRC) variable table, only includes cost-effectiveness analysis inputs available at the time of finalizing the PY9 ARP 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 evaluation later. EUL information in this table is subject to change and is not final.

Table 7-1. Total Resource Cost Savings Summary

End Use Type	Research Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (kWh)	Ex Ante Gross Peak Demand Reduction (kW)	Verified Gross Savings (kWh)	Verified Gross Peak Demand Reduction (kW)
Appliances	Air Purifier	Each	4,732	9	2,919,401	333	2,918,720	333
Appliances	Clothes Washer	Each	44,944	14	2,276,612	290	2,276,612	290
Appliances	Electric Clothes Dryer	Each	2,461	14	398,580	54	398,581	54
Appliances	Freezer	Each	1,754	11	86,648	14	86,648	14
Appliances	Refrigerator	Each	35,698	12	2,299,676	345	2,299,676	347
Appliances	Retail Air Purifier	Each	6,879	9	5,284,587	603	4,900,277	559
Appliances	Room AC	Each	4,896	12	61,200	83	61,200	83
Appliances	Water Dispenser	Each	2,591	10	293,172	34	293,172	34
Hot Water	Heat Pump Water Heater	Each	83	13	168,619	8	162,230	8
HVAC	Smart Thermostat	Each	94,844	10	26,030,784	10,691	26,022,405	6,842
HVAC	Ventilation Fan	Each	3,401	19	301,329	34	301,329	34
Electronics	Advanced Power Strip	Each	25,542	4	2,630,826	297	2,630,826	298
Misc	Pool Pump	Each	949	10	1,823,617	1,451	1,823,617	1,206

Source: ComEd tracking data and Navigant team analysis.

[3] Illinois Statewide Technical Reference Manual for Energy Efficiency Version 6.0 – Compiled Volumes (1-4). http://www.ilsag.info/technical-reference-manual.html Accessed April 14, 2017.

APPENDIX B. COMED APPLIANCE REBATE PY9 PROCESS EVALUATION RESULTS

ComEd Appliance Rebates Program

PY9 Process Evaluation

NAVIGANT

Submitted to:
ComEd

Submitted by:
Mack Shaughnessy
Dana Max
Michael Freed
Nicole DelSasso
Beth Davis

SEPTEMBER 2018

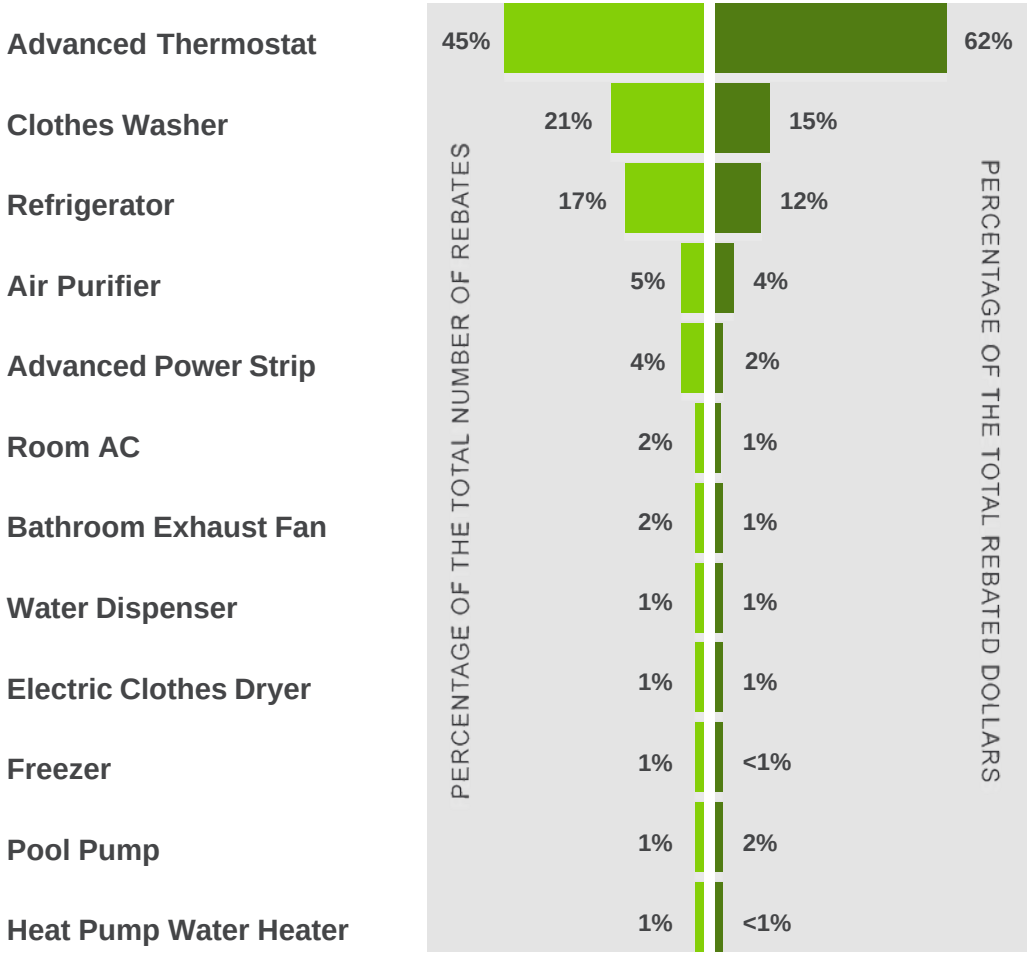
Table of Contents

Program Details

Why does the program exist?

The goal of the program is to increase the market share of **ENERGY STAR** and energy efficient products by offering rebates to minimize the price gap between these products and less efficient product offerings.

Customers received rebates for the following measures in PY9, shown by the percentage of the total number of rebates, from highest to lowest, and by the percentage of the total rebated dollars.

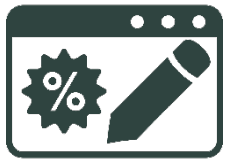


What changes to the program might we see in the future?

The following items may shape the future of the Appliance Rebates Program (ARP):

- ComEd is open to new measures that are not defined in the IL TRM.
- Advanced thermostat savings research could impact the TRM-defined expected savings for the measure.
- Advanced power strip in-service rate research could impact the expected TRM-defined savings for the measure.
- The Internet of Things (IoT) and the connected home landscape may provide options for new measures to include in future program years.

PY9 rebate delivery channels

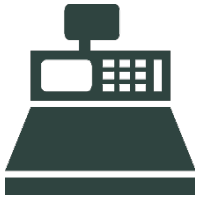


Online Rebate Application

Customers can visit the ComEd website to apply to receive a rebate.[1]

ComEd's Online Marketplace

Measures offered through the Simple Energy-operated ComEd Online Marketplace are instantly rebated.[2]



Point of Sale

Measures offered at partner retailers are instantly rebated.

Online Rebate Application	ComEd's Online Marketplace	Point of Sale
71% | 66%	23% | 27%	6% | 7%

Percentage of the total number of rebates by channel | Percentage of total rebated dollars by channel

Sources: ComEd PY9 tracking data.
1. https://www.comed.com/WaysToSave/ForYourHome/Pages/ApplianceRebates.aspx
2. https://www.comedmarketplace.com/

Marketing

ComEd and CLEAResult, ARP's implementation contractor, use various strategies to reach their target audience of customers and retailers.

ComEd

- Point-of-sale materials available at retailers
- Features in ComEd's newsletter
- Bill inserts and emails
- Billboards, TV, and digital advertisements
- Social media (primarily Facebook and Twitter)
- Directives on ComEd's website[1]

ComEd does not market to retailers directly

CLEAResult

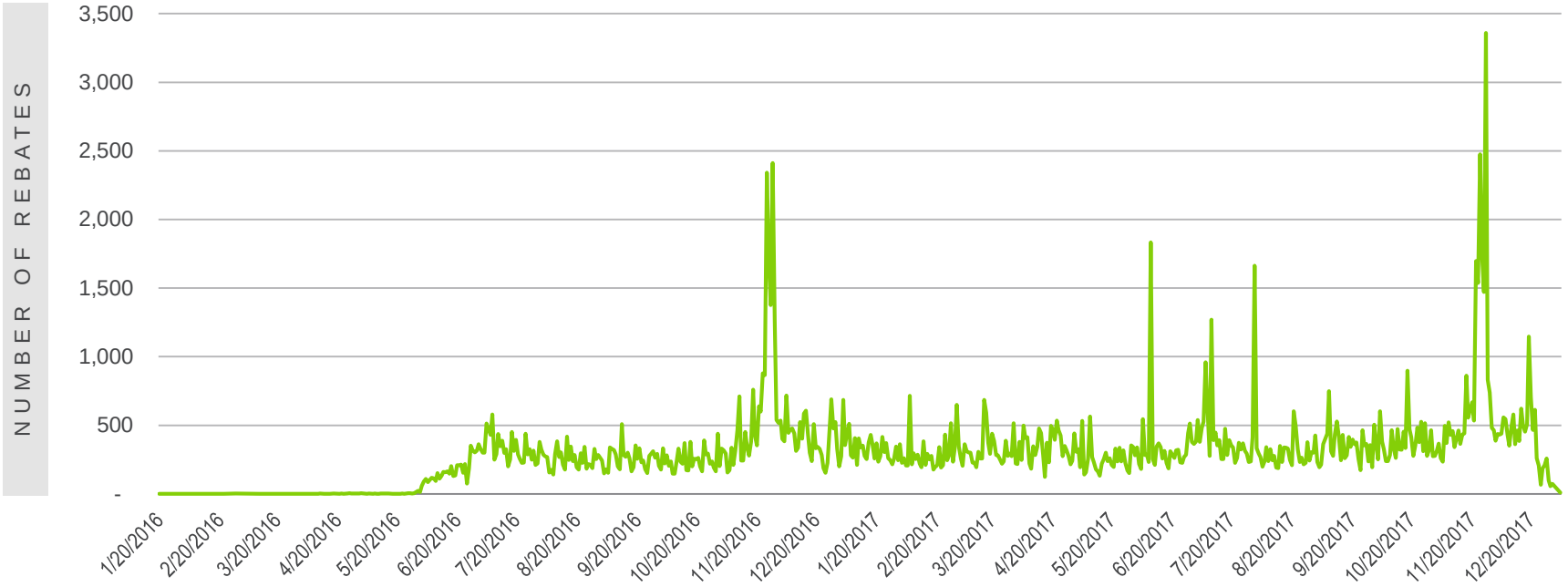
- Educates retailer and sales associates so they can properly inform customers of rebates
- Provides in store collateral for appliances which overlaps with materials offered for the Lighting Instant Discounts Program

CLEAResult primarily markets the program to and through retailers

1. Source: https://www.comed.com/WaysToSave/ForYourHome/Pages/Default.aspx

Rebate distribution throughout PY9

Rebate volume appears to be highest during seasonal shopping peaks. The largest rebate volume peaks during PY9 coincided with Black Friday and Cyber Monday sales during late November in 2016 and 2017. This shows that promotional sales are effective in increasing participation for the measure mix of this program. There are also other periods of high rebate activity, such as in early June 2017 and early August 2017, which do not correlate with known marketing pushes. In the future, Navigant plans to examine free-ridership on a quarterly basis to capture periods of high and low rebate volume separately. Quarterly free-ridership results could provide information on how retailers impact program influence.

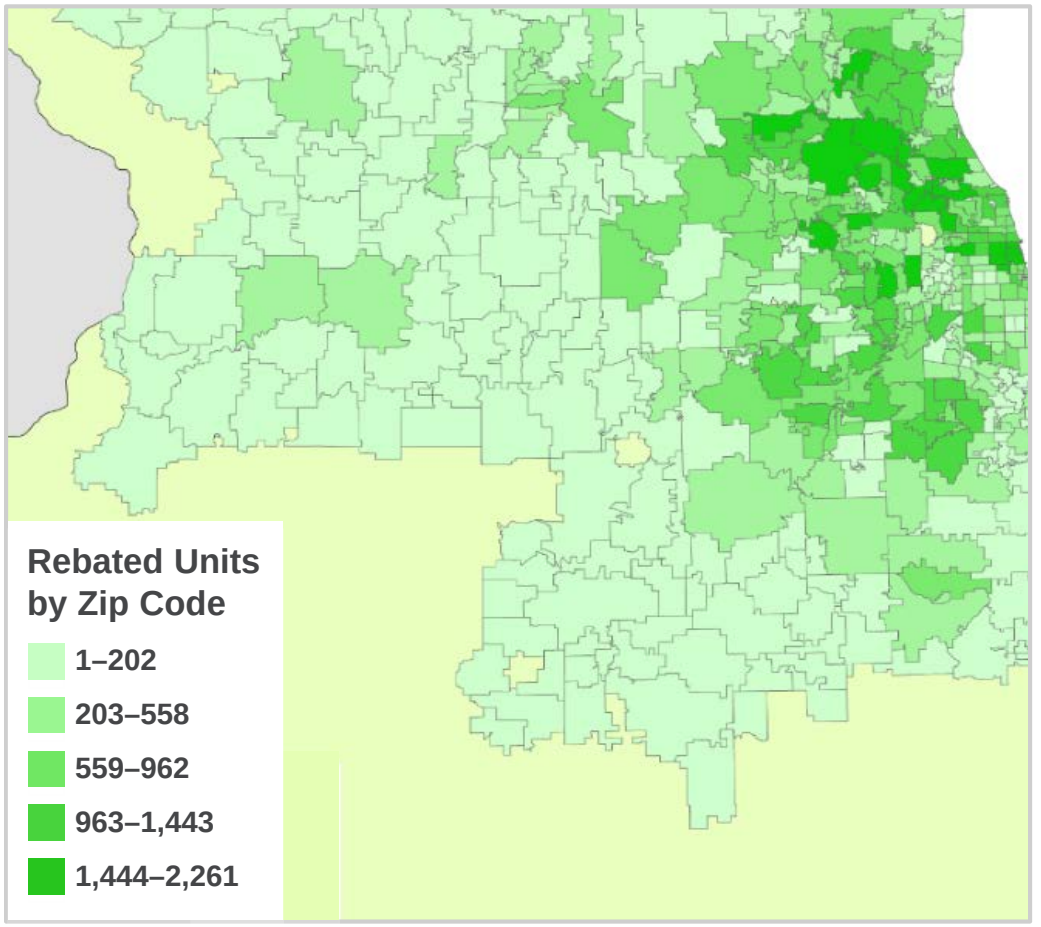


Source: ComEd PY9 Tracking Data

Where are the rebated customers?

Navigant used ComEd PY9 ARP tracking data and census data to create the following maps. These maps represent the number of measures rebated through the ‘Online Rebate Application’ and ComEd’s ‘Online Marketplace’ rebate channels. Customer zip code information was unavailable for most ‘Point of Sale’ rebate channel records in the tracking data. Records with missing zip code information from this channel represented 3% of the total number of rebates and total dollars rebated, as well as 11% of the total quantity of measures rebated.

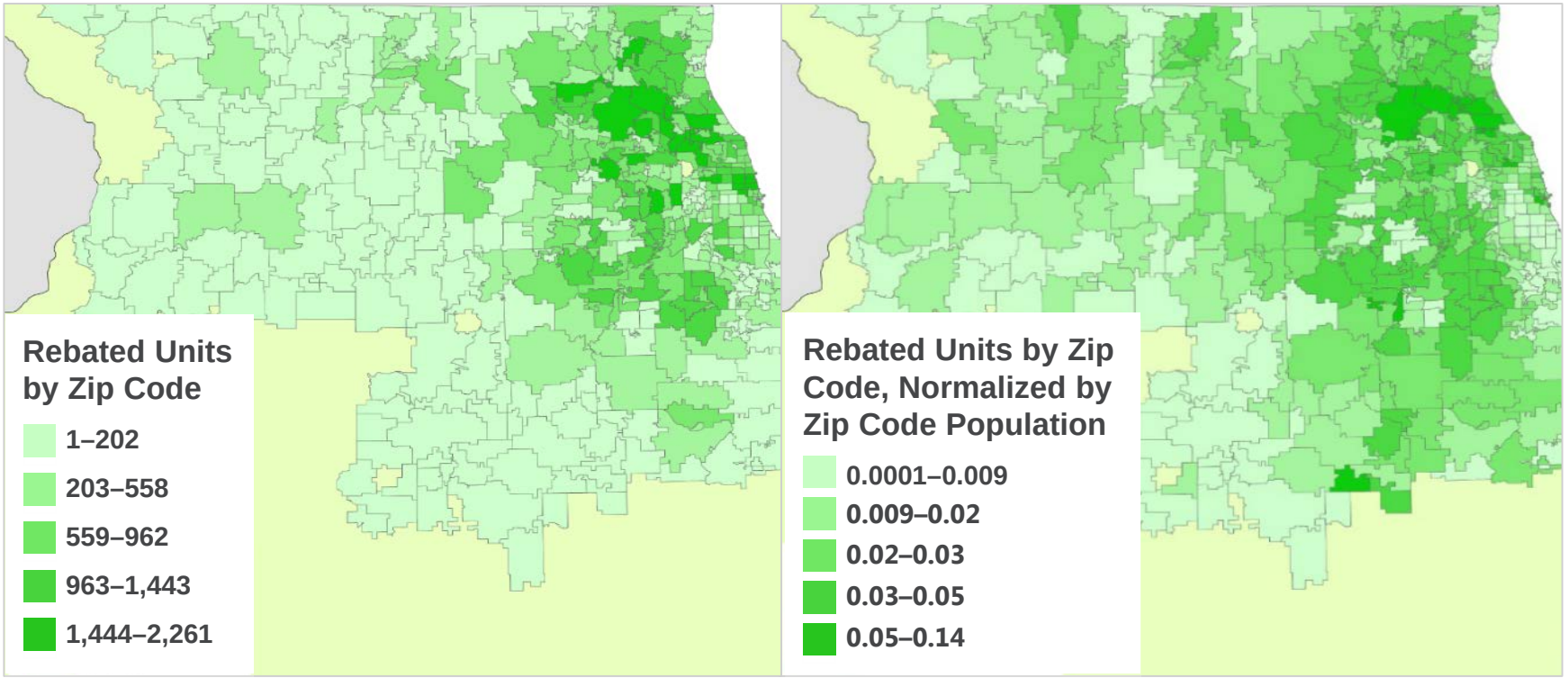
The map below shows the number of measures rebated through ARP in each zip code of the ComEd service territory. Looking solely at the location of rebated measures illustrates that the majority of rebated measures are near the city, but this does not tell the whole story…



Source: ComEd PY9 Tracking Data

A closer look at the geographic spread of rebates

After normalizing for population density by zip code (shown by the map on the right-hand side), we see the reach of the program's Online Rebate Application and Online Marketplace channels is farther than the rebated measure count alone suggests. There are several zip codes outside of the metropolitan area that have 0.009 to 0.03 rebated measures per person showing that participation per person is not concentrated in the metropolitan area. There are also zip codes throughout the territory where population-normalized rebate counts are low compared to surrounding areas.



Source: ComEd PY9 Tracking Data


Survey
Results

ARP surveys fielded in PY9

Navigant fielded ‘Fast Feedback’ and ‘Spillover’ surveys in PY9.

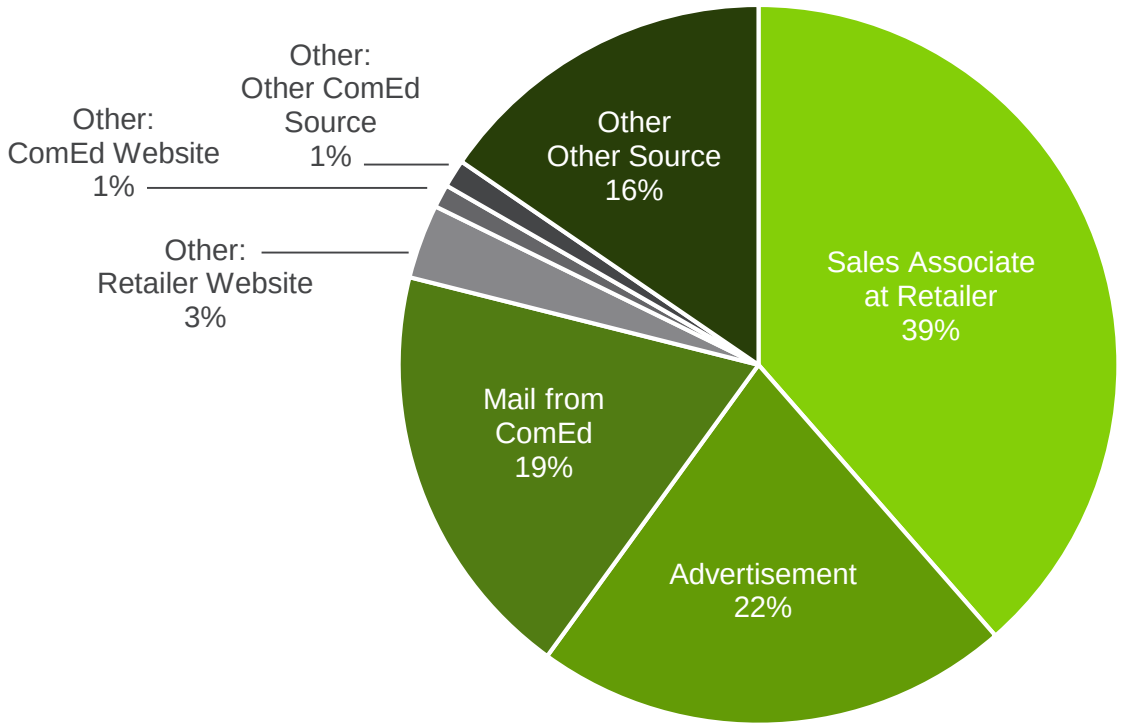
The ‘Fast Feedback’ survey was concerned with free-ridership and how participants learned about ARP.

The ‘Spillover’ survey was concerned with measuring program spillover, customer satisfaction, and customer demographics.

In the following sections, Navigant presents information on how customers learned about ARP from the ‘Fast Feedback’ survey and information on customer satisfaction and demographics from the ‘Spillover’ survey. Other information regarding free-ridership and spillover will be presented in a separate memo.

How did you find out about the program?

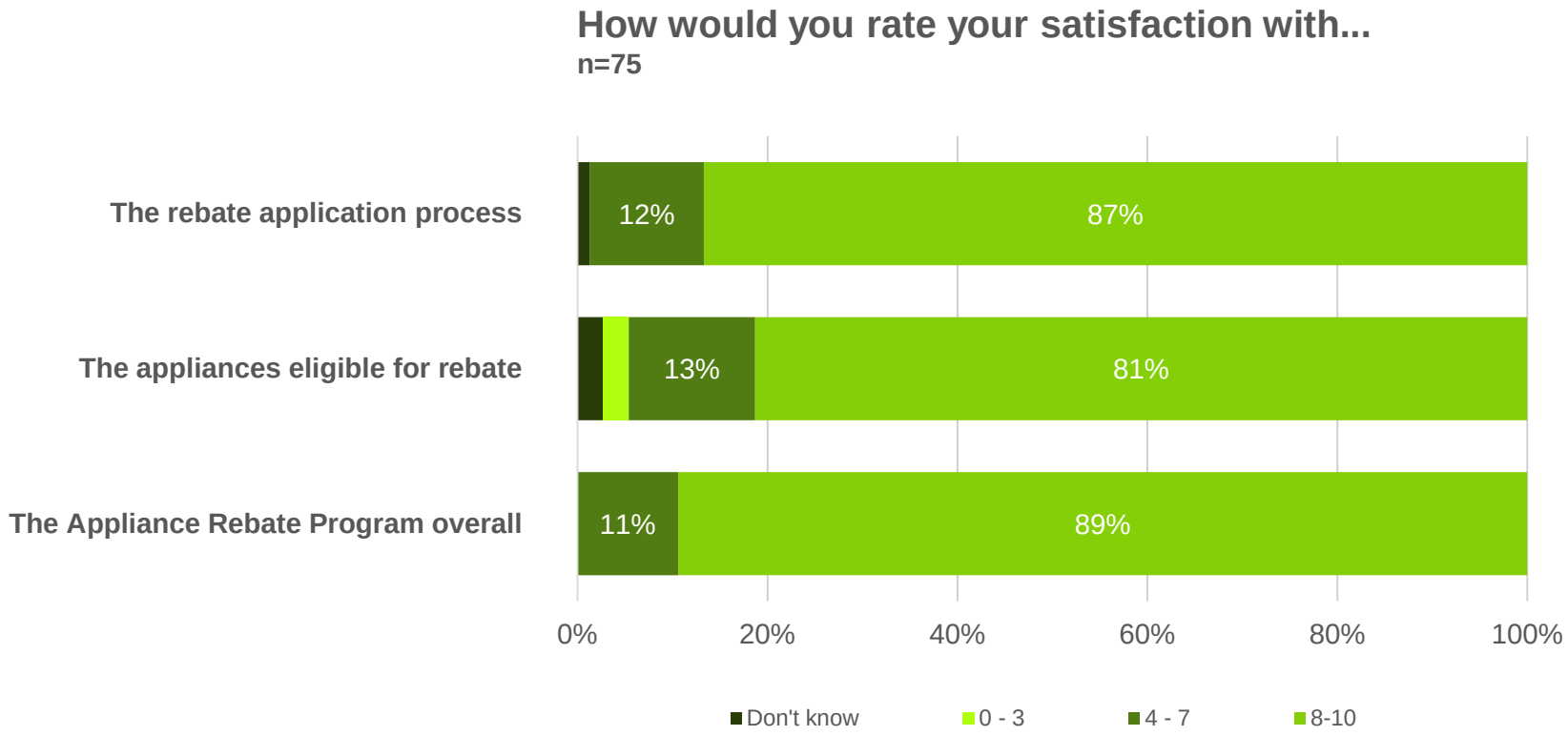
Asking about how customers discovered the Appliance Rebate Program revealed that sales associates at retailers, advertisements, and ComEd's mailings are valuable resources for increasing program awareness.



Source: ComEd PY9 Fast Feedback Survey. The count of responses to this question was 26,430. Of those respondents, 5,371 indicated they found out about the program from an other source and described the source via text. Therefore, the "Other: " categories in red are free response text survey responses; categories do not reflect all unique responses.

Customer satisfaction

The Spillover Survey indicated that customers are very satisfied with the program. 89 percent of respondents rated the overall program an 8, 9, or 10 on a 0-10 scale, where zero is ‘not at all satisfied’ and 10 is ‘extremely satisfied’.

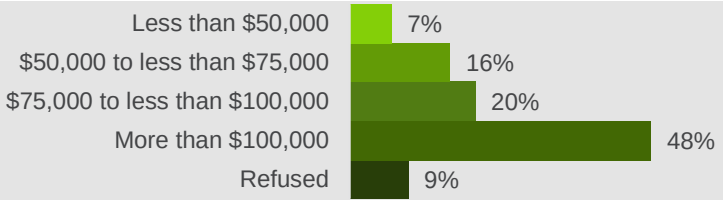


Source: Navigant PY9 Spillover Survey

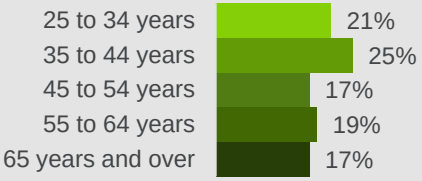
Participant demographics

Of the participants in the Appliance Rebates Program: nearly half have salaries over $100,000, they have an almost even age distribution from 25 and above, the majority live in single family homes, and they own their homes.

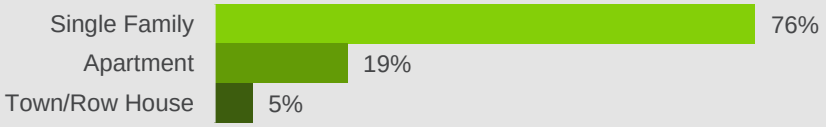
Nearly Half Salaries Over $100,000



Nearly Even Age Distribution



Majority Single Family Homes



Majority Own Homes

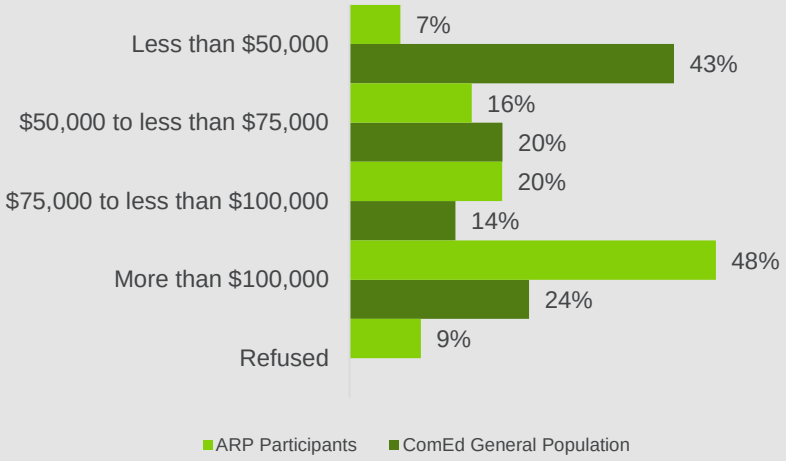
Source: Navigant PY9 Spillover Survey

Comparison Demographics

The team compared the ComEd general population to the ARP participants to understand how the participation demographics compare to the general population demographics.

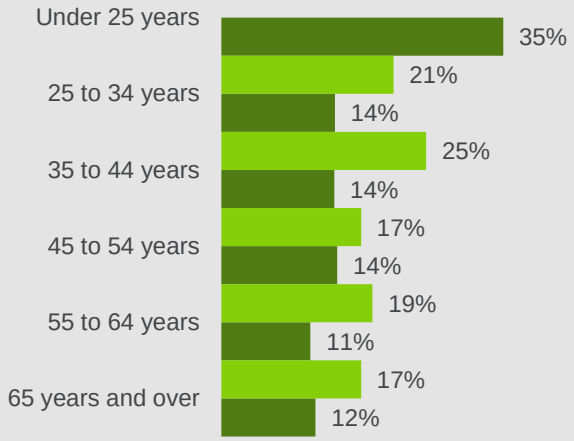
Household Income

Nearly 50% of the households that participated in the Appliance Rebates Program had incomes more than $100,000. In comparison, only 24% of the general ComEd population have a household income greater than $100,000.



Age Distribution

Both the ComEd general population and the ARP participants have a fairly even age distribution. However, 35% of the general ComEd population is under 25 years old.



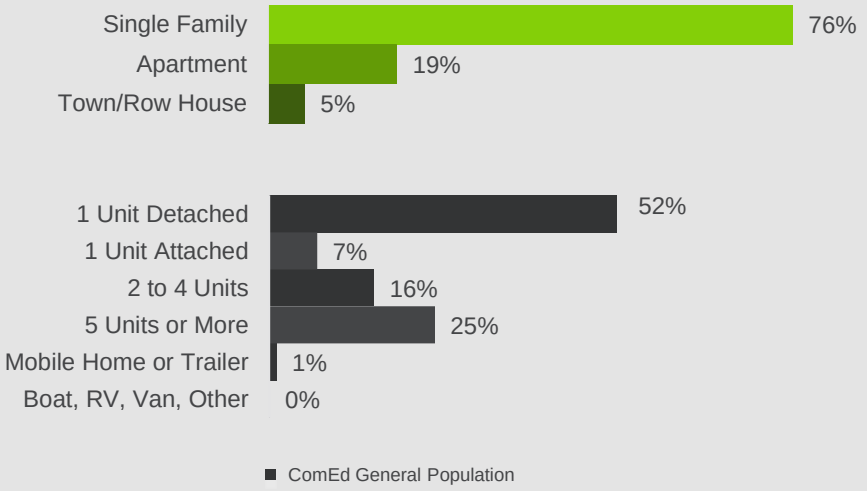
Source: PopFacts – Demographic Snapshot – ComEd Northern Illinois Service Territory. Accessed on 7/2/2018 at https://www.comed.com/SiteCollectionDocuments/ComEd_Service_Territory_Demographics_Update_122311.pdf

Comparison Demographics

The team compared the ComEd general population to the ARP participants to understand how the participation demographics compare to the general population demographics.

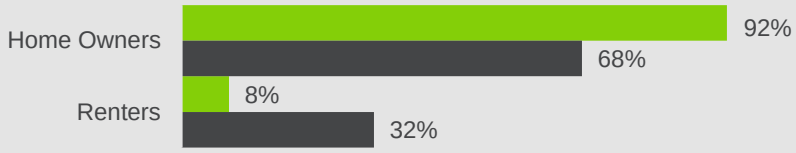
Home Type

The housing units in the ComEd General Population are primarily 1 unit detached homes (52% of home types are 1 unit detached homes), while 75% of the ARP participants had single family homes.



Home Ownership

The majority (92%) of ARP participants are home owners while only 68% of the ComEd general population are home owners.



Source: PopFacts – Demographic Snapshot – ComEd Northern Illinois Service Territory. Accessed on 7/2/2018 at https://www.comed.com/SiteCollectionDocuments/ComEd_Service_Territory_Demographics_Update_122311.pdf


Looking
to CY2018

Findings & Recommendations

Findings

1. Navigant learned from the PY9 Program Manager and Implementation Contractor interview that the primary reason customers call the CLEAResult-operated rebate application hotline is for issues related to incomplete or missing information necessary to complete the rebate application. For customers that do not call the hotline, we may not have a clear picture of why a customer wasn't able to complete a rebate application.
2. 89 percent of 'Spillover' survey respondents were satisfied with the program, rating the program an 8, 9, or 10 on a 0-10 scale, where zero is 'not at all satisfied' and 10 is 'extremely satisfied'.
3. The reach of the ARP's Online Rebate Application and Online Marketplace channels appear to extend throughout the ComEd service territory. However, there are also zip codes with potential for further participation through these channels.

Recommendations

1. Track which question number customers reach before exiting the online rebate application to identify potential trends in where customers may be having trouble with the rebate application. This information could be used to improve the design of the application and overall satisfaction with the application process.
2. Consider increasing marketing efforts in zip codes with potential for further participation.

The evaluation team would like to know:

Navigant hopes to learn the answers to these questions from program manager, implementing contractor, and retailer interviews in CY2018.

1. What are ComEd and CLEAResult interested in learning from the process evaluation in CY2018?
2. Are there any upcoming program changes in CY2018?
3. Does ComEd foresee any market transformations that may affect the ARP program?
4. Can quarterly free-ridership analysis provide detail on how retailers impact program awareness?
5. Does ComEd foresee integration of an income eligible channel into the ARP program?
6. Are marketing strategies different outside of major metropolitan areas?

CY2018 Appliance Rebate Program Timeline

June 2018

Participant Free Ridership Online Survey – What is the free-ridership by measure and how should that impact recommended net-to-gross ratios?

August 2018

Conduct PM/IC Interviews – What do ComEd and CLEAResult see as victories and pain points in CY2018?

Conduct Retailer Interviews – How are retailers raising program awareness and what can be improved?

September 2018

Report Findings