NAVIGANT

Refrigerator and Freezer Recycle Rewards Program
PY5 Evaluation Report

Final

Energy Efficiency / Demand Response Plan: Plan Year 5 (6/1/2012-5/31/2013)

Presented to Commonwealth Edison Company

April 15, 2014

Prepared by:

Jennifer Fagan
Itron Inc.

Phillip Kelsven
Itron Inc.

www.navigant.com

© 2014 Navigant Consulting, Inc.

NAVIGANT

Submitted to:

ComEd
Three Lincoln Centre
Oakbrook Terrace, IL 60181

Submitted by:

Navigant Consulting, Inc.
30 S. Wacker Drive, Suite 3100
Chicago, IL 60606
Phone 312.583.5700
Fax 312.583.5701

Contact:

Randy Gunn, Managing Director
312.938.4242
Randy.Gunn@Navigant.Com

Jeff Erickson, Director
608.497.2322
Jeff.Erickson@Navigant.Com

Disclaimer: This report was prepared by Navigant Consulting, Inc. ("Navigant") for ComEd based upon information provided by ComEd and from other sources. Use of this report by any other party for whatever purpose should not, and does not, absolve such party from using due diligence in verifying the report's contents. Neither Navigant nor any of its subsidiaries or affiliates assumes any liability or duty of care to such parties, and hereby disclaims any such liability.

NAVIGANT

Table of Contents

E. Executive Summary 1
- E.1. Program Savings 1
- E.2. Program Savings by Measure 1
- E.3. Impact Estimate Parameters For Future Use 2
- E.4. Participation Information 2
- E.5. Conclusions and Recommendations 3

1. Introduction 6
- 1.1 Program Description 6
- 1.2 Evaluation Objectives 6
  - 1.2.1 Impact Questions 6

2. Evaluation Approach 7
- 2.1 Overview of Data Collection Activities 7
- 2.2 Verified Savings Parameters 7
- 2.3 Verified Gross Program Savings Analysis Approach 9
- 2.4 Verified Net Program Savings Analysis Approach 10

3. Gross Impact Evaluation 11
- 3.1 Tracking System Review 11
- 3.2 Program Volumetric Findings 11
- 3.3 Development of the Gross Realization Rate 12
- 3.4 Development of the Part-Use Factor 12
- 3.5 Sampling Plan 13
- 3.6 Sampling Error 14
- 3.7 Verified Gross Program Impact Results 15

4. Net Impact Evaluation 17

5. Process Evaluation 19

6. Conclusions and Recommendations 20

7. Appendix 22
- 7.1 Glossary 22
- 7.2 Detailed Impact Research Findings and Approaches 26
  - 7.2.1 Gross Impact Methods 26
  - 7.2.2 Gross Impact Results 27
  - 7.2.3 Net Program Impact Methods 28
  - 7.2.4 Net Program Impact Results 33
  - 7.2.5 Unit Characteristics 33
- 7.3 Participant Survey Instrument 37
- 7.4 Retailer Survey Instrument 85

NAVIGANT

List of Figures and Tables

Figures

Figure 7-1. Age of Refrigerators 35
Figure 7-2. Age of Freezers 35
Figure 7-3. Age of Room Air Conditioners 36

Tables

Table E-1. EPY5 Total Program Electric Savings 1
Table E-2. EPY5 Program Results by Measure 1
Table 2-1. Core Data Collection Activities 7
Table 2-2. Verified Gross and Net Savings Parameter Data Sources 9
Table 3-1. EPY5 Volumetric Findings Detail 12
Table 3-2. PY5 Participant Survey Population and Sample Sizes by Stratum 14
Table 3-3. PY5 Participant Survey Population, Sample Sizes and Sampling Error by Appliance Type 14
Table 3-4. Participant Survey Sample Disposition 15
Table 3-5. PY5 Verified Gross Impact Savings Estimates by Measure Type 16
Table 4-1. PY5 Verified Net Impact Savings Estimates by Measure Type 18
Table 7-1. Research Findings Gross Savings (UECs) Adjusted for Part-Use 27
Table 7-2. Frequency of Usage in the Absence of the Program 27
Table 7-3. PY5 Research Findings Gross Impact Parameter and Energy Savings Estimates (MWh) 28
Table 7-4. PY5 Research Findings Gross Impact Parameter and Demand Savings Estimates (kW) 28
Table 7-5. PY5 Net-to-Gross Ratios for Participating Retailers 31
Table 7-6. PY5 Research Findings Net-to-Gross for Retailer and Non-Retailer Participants 32
Table 7-7: PY5 Program-Induced Replacement Calculation – Refrigerators 32
Table 7-8: PY5 Research Findings Final Program Net-to-Gross Ratios 33
Table 7-9. PY5 Research Findings Net Impact Parameter and Savings Estimates (MW) 33
Table 7-10. Age Characteristics of Recycled Appliances 34
Table 7-11. Size Characteristics of Recycled Appliances 34

E. Executive Summary

This report presents a summary of the findings and results from the Impact Evaluation of the EPY5[1] Residential Fridge and Freezer Recycle Rewards (FFRR) program. The FFRR program is designed to achieve energy savings through the retirement and recycling of older, inefficient refrigerators, freezers, and room air conditioners (Room ACs). The primary objectives of the program are to decrease the retention of high energy-use refrigerators and freezers and deliver long-term energy savings. A secondary objective is to dispose of these older units in an environmentally safe manner.

E.1. Program Savings

Table E-1 summarizes the electricity savings from the FFRR Program.

Table E-1. EPY5 Total Program Electric Savings

Savings Category †	Energy Savings (MWh)	Peak Demand Savings* (MW)
Ex Ante Gross Savings	46,763**	N/A
Verified Gross Savings	44,674	6.15
Verified Net Savings	30,531	4.18

Source: Utility tracking data and Navigant analysis.
† See the Glossary in the Appendix for definitions
** The summer coincident peak demand savings are estimated by a regression equation specified in the 2012 TRM. There is no separate regression equation for total demand savings.*
*** Evaluation team estimate.*

E.2. Program Savings by Measure

The following table summarizes the program savings by measure.

Table E-2. EPY5 Program Results by Measure

Savings Category	Refrigerators	Freezers	Room ACs
Ex-Ante Gross Savings (MWh)	N/A	N/A	N/A
Verification Factor	0.997	0.997	0.997
Part-Use Factor	0.877	0.877	1.00
Verified Gross Savings (MWh)	37,092	7,434	147.11
Net to gross ratio (NTG)	0.67	0.75	0.70
Verified Net Savings (MWh)	24,852	5,576	103

Source: Utility tracking data and Navigant analysis.

[1] The EPY5 program year began June 1, 2012 and ended May 31, 2013.

E.3. Impact Estimate Parameters For Future Use

In the course of conducting the PY5 research, the evaluation did research on parameters used in impact calculations including those in the Illinois TRM. Some of those parameters are eligible for deeming for future program years or for inclusion in future versions of the TRM. The evaluation team's parameters recommended for future use are shown in the following table.

Table E-3. Impact Estimate Parameters for Future Use

Parameter	Refrigerators	Freezers	Room ACs	Data Source
NTG				
Retailer	0.11*	0.18*	N/A	PY5 Retailer surveys
Non-Retailer	0.73*	0.56*	0.50	PY5 Participant Survey
Wtd. Average	0.56*	0.53*	0.50	PY5 Participant Survey; PY5 Retailer surveys
Part-Use Factor	0.92	0.83	1.00	PY5 Participant Survey
Verification Factor	0.997	0.997	0.997	PY5 Participant Survey

* Includes impact of Program-Induced Replacement factors of -0.07 for refrigerators and -0.03 for freezers.

As in PY4, the net-to-gross ratios for refrigerators and freezers incorporate a retailer-based net-to-gross ratio for units that were subsequently replaced by participants. Many participant-replacers indicated that in the program's absence, they would have given their units to the retailer they bought the new one from. In turn, those retailers indicated they would have deconstructed and/or recycled many of those units via their normal collection procedures. The research report section of this document (Section 7, Appendix) provides a fully detailed analysis and reporting of the retailer based NTGR and participant survey-based NTGR results. Directionally, the NTG ratios are significantly down from PY4, in part because input from a greater number of retailers was incorporated into the NTGR calculation.

However, the part-use factors in PY5 are somewhat higher than the PY4 research report values. The PY5 value for refrigerators is 0.92 (versus 0.85 in PY4), while that for freezers is 0.83 (versus 0.75 in PY4).

In addition, only one person out of 329 surveyed stated that ComEd did not pick up their unit resulting in a verification rate of nearly 100%. This value is based on responses to a phone survey question (and related follow-up questions) regarding whether the respondent recalled having the program pick up their unit. In total, 0.3% (1 of 329) of participants surveyed said that the program did not pick up their unit, resulting in a verification rate of 99.7%.

E.4. Participation Information

According to program tracking data, there were 43,328 participants in PY5 and 48,805 recycled measures. After applying the 99.7% verification rate, the total number of verified participants was reduced to 43,198, and the number of verified measures was reduced to 48,659. These values are shown in the following table.

Table E-4. EPY5 Primary Participation Detail

Participation	Program-Reported Number of Units	Verification Factor	Verified Participation Units	% of Total Units
Number of Participants	***43,328***	***99.7%***	***43,198***	***100%***
Units by Measure Type				
Refrigerators	41,333	99.7%	**41,209**	85%
Freezers	6,836	99.7%	**6,815**	14%
Room ACs	636	99.7%	**634**	1%
Total Measures	***48,805***	***99.7%***	***48,659***	***100%***

Source: Utility tracking data and Navigant analysis.

E.5. Conclusions and Recommendations

The following provides insight into key program findings and recommendations

Program Savings Goals Attainment

Finding 1. The starting PY5 net energy savings goal for this program was 21,000 MWh, which represents a 38% decrease from the final PY4 goal of 33,371 MWh. This reduction is reflective of the much lower per-unit savings values based on the regression formula in the Illinois Statewide TRM version 1.0. The ex-ante net energy savings was considerably higher than the goal, at 31,869 MWh.

Finding 2. The PY5 verified gross energy savings is 44,674 MWh, while evaluation-verified net savings is 30,531 MWh, which is 68% of the verified gross savings.

Gross Realization Rates

Finding 3. The Gross realization rate is based on the Verification rate only. This value is based on responses to a phone survey question regarding whether the respondent recalled having the program pick up their units. In total, .3% (1 of 329) of participants surveyed said that the program did not pick up their units, resulting in a Verification rate of 99.7% (i.e., 0.997).

Finding 4. Initial research on the verification rate was based a single question, which proved to be insufficient to determine whether units had, in fact, been picked up and recycled by the program.

Recommendation 1. Additional follow up questions should be added to the survey for those that answer "no" to the verification question to probe in more detail on their answer. For example:

- What was your understanding of this question? why did you answer don't know?
- Do you still have your old refrigerator or freezer? Where is it now? Is it plugged in and working in your home?
- [IF APPLICABLE] Why wasn't it picked up?

Recommendation 2. In addition, other compelling evidence should be examined. This primarily consists of program records (i.e., cancelled checks, photos of the recycled unit, and other similar documentation that the unit was, in fact, recycled).

Net-to-Gross Ratio

Finding 5. The NTG ratio used to calculate verified savings was 0.68, which was based on the PY3 program evaluation. The Evaluation Research Findings NTG ratios are 0.56 for refrigerators (based on a weighted average of Retailer NTGR of 0.17 and Non-Retailer NTGR of 0.79), 0.52 for freezers (based on a weighted average of Retailer NTGR of 0.21 and Non-Retailer NTGR of 0.59) and 0.50 for room ACs for a total NTG ratio of 0.56. The Research Findings NTG ratio is a weighted average of participating customer and retailer responses to survey questions. It also includes a term for Program Induced Replacements, per the TRM.

Recommendation 3. Free ridership can be reduced by increasing marketing to those who have secondary units and eliminating participation by those who are replacing existing primary units. However, this comes at a cost, since the pool of available participants would be reduced significantly by doing so.

Energy and Demand Savings Estimates

Finding 6. Based on the specified regression in the TRM, a small number of units have negative energy and demand consumption. These are a function of the unit size and age, and comprise a very small fraction of the population. For such units with negative consumption, the average consumption of similar sized and aged units was used in place of the negative value.

Finding 7. Gross peak demand savings are 6.15 MW and net savings are 4.20 MW. As with energy savings, these are significantly down from PY4 savings values and are reflective of the much lower per-unit savings values based on the regression formula in the Illinois Statewide TRM version 1.0.

Recommendation 4. For units with negative energy and demand consumption, we recommend that additional language be added to the TRM to address this situation. The language could be: "The regression based savings algorithm produces negative unit energy or demand consumption values for a very small percentage of units. For such units with negative consumption, the average consumption of similar size and age units should be used in place of the negative value. For example, refrigerator units with negative consumption have an average age of 21 years and average size of 13 cubic feet so the average consumption of units 20-22 years old and 12-14 cubic feet should be used instead of regression-based estimates."

Recommendation 5. We recommend that the participating retailers capture the prior location of the units and if the unit is a primary or secondary unit. Nearly 5,000 records were missing this information and most of the missing records were picked up by participating retailers. This is important data that is used in the Illinois Statewide TRM version 2.0 regression model and will be applied in the PY6 evaluation.

Program Participation

Finding 8. Program participation, based on the number of participants, remains strong but is down about 10% from PY4.

The Fridge and Freezer Recycle Reward Program continues to recycle a high volume of units and provides a reliable source of savings for ComEd. Verified savings have decreased significantly from PY4 values due to use of a lower savings per unit based on the regression equations specified in the Illinois Statewide TRM version 1.0. This regression specification is based on the metering study completed for ComEd in PY4. Net savings have also decreased slightly due to the application of the lower net-to-gross ratios from the PY3 evaluation.

1. Introduction

1.1 Program Description

The Residential Fridge and Freezer Recycle Rewards (FFRR) program was designed to achieve energy savings through the retirement and recycling of older, inefficient refrigerators, freezers, and room air conditioners (Room ACs). The primary objectives of the program are to decrease the retention of high energy-use refrigerators and freezers and deliver long-term energy savings. A secondary objective is to dispose of these older refrigerators and freezers in an environmentally safe manner.

1.2 Evaluation Objectives

The Evaluation Team identified the following key researchable questions for EPY5:

1.2.1 Impact Questions

1. What are the gross impacts from this program?
2. What are the net impacts from this program? What is the level of free ridership with this program? How can free ridership be reduced?
3. Did the program meet its energy and demand goals? If not, why not?

There was no process evaluation of the FFRR program for EPY5.

2. Evaluation Approach

This section of the evaluation report presents the approaches used to verify gross and net kWh and kW savings from the FFRR program. Key data sources are described. The methodologies for verifying program participation and estimating gross and net kWh and kW savings are discussed.

2.1 Overview of Data Collection Activities

The core data collection activities included a review of the tracking data, in depth interview with the program manager, and participant surveys. The full set of data collection activities is shown in the following table.

Table 2-1. Core Data Collection Activities

N	What	Who	Target Completes	Completes Achieved	When
1	Tracking Data Analysis	All Program Participants	All	All	October 2013
2	Communications with Program Staff	ComEd Program Manager	multiple	multiple	Ongoing March –August 2013
3	CATI Telephone Surveys	Sample of Program Participants	300	303	July – August 2013

2.2 Verified Savings Parameters

Verified Gross and Net Savings (energy and coincident peak demand) resulting from the PY5 Residential Fridge and Freezer Recycle Rewards Program were calculated using the following algorithms as specified in the Illinois 2012 TRM version 1.0:

Unit Energy Consumption (UECs). Annualized estimates of per-unit energy and demand savings for refrigerators and freezers were determined by applying the regression coefficients stated in the 2012 TRM v. 1.0 to the characteristics of the units in the tracking data captured by JACO. The regression equations used in this calculation are shown below.

Fridge and Freezer Unit Energy Consumption:

ΔkWh = [-103.39+ (Freezer * 433.40) + (Side * 614.91) + (Chest * -490.78) + (SingleDoor * -797.90) + (Age * 23.93) + (Pre1993 * 289.82) + (Capacity * 13.52) + (ManualDefrost * -381.23)] * 0.877 Part-Use Factor

Where:

Freezer = Freezer dummy (=1 if freezer, else 0)
Side = Side-by-side dummy (= 1 if side-by-side, else 0)

Chest = Chest dummy (= 1 if chest freezer, else 0)
Age = Age of retired unit
Pre1993 = Pre-1993 dummy (=1 if manufactured pre-1993, else 0)
Capacity = Capacity (cubic feet) of retired unit
ManualDefrost = Manual defrost dummy (= 1 if manual defrost, else 0)
Part-Use Factor = 0.877 To account for those units that are not running throughout the entire year.

Fridge and Freezer Unit Energy Demand:

ΔkW = [(Side-by-side * 0.04920) + (Freezer * 0.01988) + (Age * 0.01199) + (Age2 * -0.0001443) + (Capacity * 0.001156) + (ManualDefrost * -0.04503) + (GaragePorchPatio * 0.04681) - 0.09662] * 0.877 Part-Use Factor

Where:
GaragePorchPatio = Variable based on unit location (=1 if unit in Garage, Porch or Patio, else 0)

2.2.1.1 Room Air Conditioner Estimates

Room air conditioner savings are deemed at 232 kWh and 0.04 kW annually because the program tracking data is not sufficient to calculate energy savings using the TRM algorithm specification. Specifically, the tracking data does not capture unit capacity (BTU/hr) or full load equivalent hours (FLEH) which is required by the TRM savings algorithm. Instead, the TRM default values (FLEH = 210 hours, capacity = 8,500 BTU, SEER = 7.7) were used which resulted in a deemed estimate of 232 kWh.

Room Air Conditioner Unit Energy Consumption:

ΔkWh = unit capacity x load x FLEH / (efficiency x 1000)

Where:
unit capacity [BTU/h] is a nameplate value
load [dimensionless] is assumed to be 1.0 with partial loading accounted for in FLEH
FLEH (full-load equivalent hours) [hours] is basically the compressor run-time if we assume window AC units are generally a two-state device – on or off.
Efficiency [Btu out / Watts in] or Energy Efficiency Rating (EER) for equipment of this type
1000 is the conversion factor from Watts to kW

The following table presents the parameters that were used in the verified gross and net savings calculations, along with an indication of which were examined through evaluation activities and which were deemed.

Table 2-2. Verified Gross and Net Savings Parameter Data Sources

Input Parameters	Data Source	Deemed or Evaluated?
Unit Energy Consumption	Illinois 2012 TRM v 1.0	Deemed
Unit Energy Demand	Illinois 2012 TRM v 1.0	Deemed
Net-to-gross ratio	SAG Spreadsheet †	Deemed
Part-Use Factor	Illinois 2012 TRM v 1.0	Deemed
Verification Factor	PY5 Participant Surveys	Evaluated

† http://ilsagfiles.org/SAG_files/Meeting_Materials/2013/August 5-6, 2013 Meeting/ComEd PY5-PY6 Proposal Comparisons with SAG.xls

2.3 Verified Gross Program Savings Analysis Approach

The evaluation-verified savings for the FFRR program are based on an in-depth review and analysis of tracking data, application of the regression-based algorithm per the Illinois 2012 TRM version 1.0, and a separate verification via a telephone survey of whether units were picked up by the program. The verification was based on a screening question in the telephone survey to confirm the appliances were picked-up as reported in the program tracking database.

The verified energy (kWh) and demand (kW) savings for this program are based on applying regression based coefficients from the Illinois 2012 TRM version 1.0 (which, in turn, are based on the results of an in-situ metering study conducted by the evaluation in PY4[2]). Savings for PY5 are computed by applying the TRM regression coefficients to the mix and characteristics of units collected in PY5. Evaluation-verified savings are computed by taking the savings for each unit, summing across all units collected, and multiplying times the part-use factor. The part-use factors for refrigerators and freezers are deemed values specified in the Illinois 2012 TRM v 1.0, for both kWh and kW savings calculations.

The verified gross savings estimates for both energy (kWh) and peak demand (kW) rely on regression equations developed originally from the metering study of in-situ metered units that was conducted by the evaluation in PY4. This methodology corresponds to Option D (Calibrated Simulation) in PJM's Manual 18b, Energy Efficiency Measurement and Verification. This Option allows the use of a model, in this case the regression equations that have been calibrated using actual data (in this case, the *in situ* metered data).

Gross energy savings are initially expressed in terms of Full-year Unit Energy Consumption (UECs). The regression-based approach that underlies UEC estimates models full-year energy savings as a function of several independent variables. These include appliance characteristics (e.g., age and size), and several dummy variables (e.g., unit type, configuration, whether the unit was manufactured before 1993 or not). A part-use adjustment is then applied.

Part-Use Adjustment. The full-year UEC value is then adjusted for part-use, based on the deemed part-use factor from the PY3 evaluation. The part-use adjustment is based on responses to phone survey

[2] For more details regarding this study, please see the PY4 FFRR Final report.

questions regarding the actual intended use of units in the program's absence. This adjustment pro-rates the full-year value for the proportion of the year that the unit would have been operated in the program's absence. The value of this adjustment was calculated directly from phone survey responses regarding the number of months during the year that the participant indicated the appliance would have been operated if the program had not picked it up. Average part-use factors were calculated across all respondents, separately for refrigerators and freezers.

Research Report Ex-Post Gross Savings. Separate calculations were made in the Research Report findings in Section 7.2 of this report, based on the results of primary data collection and analysis from this year's PY5 evaluation activities.

2.4 Verified Net Program Savings Analysis Approach

Evaluation-Verified Net Savings Analysis. Verified net energy and demand (coincident peak and overall) savings were calculated by multiplying the Verified Gross Savings estimates by the deemed net-to-gross ratios (NTGR) for each measure category. The deemed NTGR values came from the PY3 evaluation and were approved through a negotiation process within the Stakeholder Advisory Group.[3]

The PY3 values were based on participant self-reported information from the telephone surveys on alternative disposal methods in the program's absence. Responses that correspond to a method that permanently removes the unit from the grid are considered free riders.

Research Report Ex-Post Net Savings. Separate calculations were made in the Research Report findings (Section 7.2), based on the results of primary data collection and analysis from this year's PY5 evaluation activities.

[3] http://ilsagfiles.org/SAG_files/Meeting_Materials/2013/August 5-6, 2013 Meeting/ComEd PY5-PY6 Proposal Comparisons with SAG.xls, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework-1.html

3. Gross Impact Evaluation

Program activity remained relatively high in PY5 although the volume of activity was down from PY4. A total of 48,659 units were verified as being recycled, and these achieved 44,674 MWh and 6.12 MW of verified gross savings. It should be noted that PY5 verified gross MWh savings is less than half of PY4 verified gross MWh savings. This is due to the adoption of a TRM savings estimation methodology that is based on *in-situ* metering rather than the DOE Lab metering approach. The latter approach was the basis for the PY2 savings/unit estimates, on which the PY4 verified gross MWh savings calculation was based.

3.1 Tracking System Review

A detailed review of the tracking system data surfaced some minor issues that should be addressed going forward. Over 5,000 units listed "Cust NA" for prior location, unit usage (primary or secondary) if the unit was replaced or not, and seasonal usage if applicable. According to program tracking data, almost all of the cases of missing data are units that were recycled by the program's retail partners. These characteristics are not currently required to estimate program savings based on the regression specification in the 2012 Illinois TRM. However, they are required for new DOE Uniform Methods Protocol (UMP) refrigerator and freezer recycling saving algorithms. Should the Illinois TRM ultimately incorporate the UMP algorithms, the underlying regression equations include the variables mentioned above, i.e. prior location, unit usage (primary or secondary) if the unit was replaced or not, and seasonal usage if applicable . Therefore, those fields will need to be populated.

Key findings are:

1. The tracking data is high quality and is sufficient to estimate program saving accurately under the current and future TRM regression specifications (versions 1.0 and 2.0)
2. Prior location, unit usage, unit season, and unit replaced are missing in over 5,000 records mostly due to the retail partners not collecting those data elements.

3.2 Program Volumetric Findings

According to program tracking data, there were 43,328 participants, contributing a total of 48,805 units to the program. However, not all of these could be verified through evaluation survey efforts. A verification rate of 99.7% was established based on responses to the phone survey that was fielded. Of 329 respondents contacted, 1 respondent indicated that the program did not pick up their unit resulting in a 99.7% verification rate. The volume of units processed through the program is down from PY4, when 51,050 units were verified as being recycled through the program.

The breakdown of units is 85% refrigerators, 14% freezers, and 1% air conditioners which is almost identical to the proportions in PY4.

Key findings include:

1. Program activity is down 10% from PY4
2. The proportions of units by unit type are similar to PY4

Table 3-1. EPY5 Volumetric Findings Detail

Participation	Program-Reported Number of Units	Verification Factor	Verified Participation Units	% of Total Units
Number of Participants	***43,328***	***99.7%***	***43,198***	***100%***
Units by Measure Type				
Refrigerators	41,333	99.7%	**41,209**	85%
Freezers	6,836	99.7%	**6,815**	14%
Room ACs	636	99.7%	**634**	1%
Total Measures	***48,805***	***99.7%***	***48,659***	***100%***

Source: Utility tracking data and Navigant analysis.

3.3 Development of the Gross Realization Rate

The Gross realization rate is based on the Verification rate only. This value is based on responses to a phone survey question regarding whether the respondent recalled having the program pick up their units. Of 329 respondents contacted, 1 respondent indicated that the program did not pick up their unit resulting in a 99.7% verification rate.

Initial survey results indicated that 31 respondents were not able to affirm that their unit was picked up by "ComEd's subcontractor JACO". Opinion Dynamics called all of these respondents back to clarify their answers and were able to reach 90% of the respondents (28 of 31). The majority, all but one, were able to affirm their unit was, in fact picked up. The point of confusion was around which entity did the pick-up:

- 10 of 31 indicated that they did not know who picked up the unit,
- Another 10 of 31 replied that a retailer picked up the unit,
- The remainder (n=10) provided various responses including that: they recycled a unit different from the one that is recorded, they still did not know who did the pick-up, and they did not know they were eligible for a rebate.

Based on this experience, it is recommended that additional questions be added to the PY6 survey for those that answer "no" to the verification question to probe in more detail on their answer. For example:

- What was your understanding of this question? Why did you answer don't know?
- Do you still have your old refrigerator or freezer? Where is it now? Is it plugged in and working in your home?
- [IF APPLICABLE] Why wasn't it picked up?

3.4 Development of the Part-Use Factor

The Part-Use factor is used to adjust annualized Unit Energy Consumption values (which presume 8,760 hours of use) for the actual hours of operation. The part-use factor accounts for the fact that a unit that would have stayed in use would have been in use only part of the time. For example, the savings from a unit that would have been used only three months of the year is only one-quarter

(3/12) the savings from a unit with year-round use. Participant survey responses provide information on the self-reported months of use for the unit if the program had not removed it, and these are used to calculate the part-use factor.

Part-use factors from the PY3 evaluation were used in this calculation and those factors were deemed in the 2012 TRM. The TRM Part-Use Factors are shown below:

PY3 Part-Use Factors

- Refrigerators - 0.877
- Freezers - 0.877
- Room Air Conditioners – 1.00

3.5 Sampling Plan

Participant survey. The sample of FFRR participants was randomly selected from the FFRR program Tracking Database provided by ComEd. Basic data cleaning steps were undertaken before the sample was pulled from the database to, among other things, remove records with missing or invalid phone numbers. A total of 1,529 participants who recycled more than one of the same types of a major appliance were dropped from the survey effort for ease of survey administration. (Also, to avoid survey fatigue, participants were only asked about one major appliance.) In addition, 230 participants were dropped because of missing phone numbers or the tracking database indicated they were a business. These records could not be included in the surveying efforts, but were included in the final impact results. The final participant population from which the survey sample was drawn was 43,316 participants.

The sample was stratified by appliance type and quotas were set based on the proportion of each appliance in the general population. Each participant was assigned to one of eight strata based on the type of unit or units recycled: Primary Refrigerator, Secondary Refrigerator, Primary Refrigerator and AC Unit, Secondary Refrigerator and AC unit, Freezer, and Freezer and AC Unit, primary refrigerator and freezer, and secondary refrigerator and freezer. Quotas were then set for each stratum. The Freezer strata were oversampled to ensure sufficient data would be available.

The survey staff was instructed to randomly select and dial participants until they had reached the designated quotas. There was no separate quota for Room AC Recyclers because AC participants would naturally end up in the refrigerator and freezer quotas. Table 3-2 shows the population sizes and number of completed surveys for each of the strata.

Table 3-2. PY5 Participant Survey Population and Sample Sizes by Stratum

Strata (Types of Units Recycled)	Sample Size* (N)	Completed Surveys (n)
Primary Refrigerator	134	104 (33 from Participating retailers)
Secondary Refrigerator	118	121 (41 from Participating retailers)
Primary Refrigerator and AC Unit	2	1
Secondary Refrigerator and AC unit	1	2
Freezer	37	65
Freezer and AC Unit	1	1
Refrigerator, Freezer and AC Unit	5	0
Room AC Unit	2	0
Primary Refrigerator and Freezer	0	3 (1 from Participating retailers)
Secondary Refrigerator and Freezer	0	6
Total	300	303

**Source: PY5 FFRR Participant Survey Sample Frame. Designed from Program Tracking Data,*

3.6 Sampling Error

Table 3-3 gives population sizes, completed interviews and the associated statistical confidence intervals for each appliance type. A 90% confidence interval was used in the analysis.

Table 3-3. PY5 Participant Survey Population, Sample Sizes and Sampling Error by Appliance Type

Strata	Population Size* (N)	Completed Surveys (n)	Sampling Error (90% CI)
Recycled Refrigerators	41,333	237	5.30%
Recycled Freezers	6,836	75	9.40%
Totals	**48,169**	**312****	**4.60%**

**Source: PY5 FFRR Participant Survey Sample Frame. Designed from Program Tracking Data.*
*** This value exceeds the number of survey completes in Table 3-3, since some respondents recycled both a refrigerator and a freezer.*

Survey Disposition

Table 3-4 shows the final dispositions for the 2,286 program participants we attempted to contact for this evaluation. As the table shows, we completed interviews with 303 participants, or 13.30%. We were unable to reach 43.9% for a variety of reasons such as no one answering, an answering machine, or a busy signal. Another 6.8% requested to be called back later to complete the survey but did not end up doing so. There were problems with the phone number, such as a disconnected number, for 8.7%. Finally 21.6% of participants who answered refused to participate in the survey.

The remaining reasons why surveys were not completed were: ignorance of who the appliance manufacturer was (2%) or ComEd was not their electric utility (0.40%). For the last category, we cannot say if the participant database included some people in error or if these respondents had recall problems.

Table 3-4. Participant Survey Sample Disposition

Sample Disposition	Customers	%
Participants Attempted to Contact	2,286	100.00%
Completes	303	13.30%
Appliance not picked up	1	0%
Did not know refrigerator manufacturer	46	2.00%
Electric company not ComEd	9	0.40%
Refusal	494	21.60%
Unable to Reach	1003	43.90%
Language Barrier	45	2.00%
Phone Number Issue	199	8.70%
Non-Specific Callback/Appointment Scheduled	156	6.80%

Source: Evaluation Team analysis.

3.7 Verified Gross Program Impact Results

Multiplying the gross savings by the verification factors and part use factors produces total program verified gross savings of 44,674 MWh and 6.15 MW as shown in Table 3-5. The table presents savings at the measure group level. Statistical significance is not reported and is not relevant, since the savings were estimated for the entire population of verified units rather than a sample of projects.

Table 3-5. PY5 Verified Gross Impact Savings Estimates by Measure Type

	Gross Energy Savings (MWh)	Gross Peak Demand Savings (MW)
Refrigerators		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	37,092	5.2
Freezers		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	7,434	0.96
Room ACs		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	1.00	1.00
Verified Gross Savings	147	0.03
Total		
Ex-Ante PY5 Gross Savings	46,763	N/A
Verified Gross Realization Rate	0.997	0.997
Verified Gross Savings	44,674	6.15

Source: Evaluation Team analysis.

4. Net Impact Evaluation

The primary objective of the net savings analysis for the FFRR program is to determine the program's net effect on customers' electricity usage. This requires estimating what would have happened in the absence of the program. The program Net-to-Gross ratios account for the program's influence on the overall savings due to the program. In accordance with the directives of the Stakeholder Advisory Group (SAG)[4], NTGRs from the most recently completed evaluation, that for PY3, were used to estimate verified Net savings. The Net-to-Gross ratios from the PY3 evaluation are shown below:

- Refrigerators - 0.67
- Freezers - 0.75
- Room Air Conditioners – 0.70

After applying the PY3 NTGRs, the evaluation calculated verified net savings is 30,531 MWh and 4.20 MW as shown in Table 4-1. The table presents savings at the measure group level. The overall program-wide net-to-gross ratio is 68%.

[4] http://ilsagfiles.org/SAG_files/Meeting_Materials/2013/August 5-6, 2013 Meeting/ComEd PY5-PY6 Proposal Comparisons with SAG.xls, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework-1.html

Table 4-1. PY5 Verified Net Impact Savings Estimates by Measure Type

	Energy Savings (MWh)	Peak Demand Savings (MW)
Refrigerators		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	37,092	5.16
Free Ridership	0.33	0.33
Spillover	N/A	N/A
NTG	0.67	0.67
Verified Net Savings	24,852	3.50
Freezers		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	7,434	0.96
Free Ridership	0.25	0.25
Spillover	N/A	N/A
NTG	0.75	0.75
Verified Net Savings	5,576	0.72
Room ACs		
Ex-Ante PY5 Gross Savings	N/A	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	147	0.03
Free Ridership	0.30	0.30
Spillover	N/A	N/A
NTG	0.70	0.70
Verified Net Savings	103	0.02
Total		
Ex-Ante PY5 Gross Savings	46,763	N/A
Verification Factor	0.997	0.997
Part Use Factor	0.877	0.877
Verified Gross Savings	44,674	6.12
Free Ridership	0.32	0.32
Spillover	N/A	N/A
NTG	0.68	0.68
Verified Net Savings	30,531	4.20

Source: Evaluation Team analysis.

5. Process Evaluation

A process evaluation was not conducted for the FFRR program in PY5.

6. Conclusions and Recommendations

This section summarizes the key findings and recommendations.

The Fridge and Freezer Recycle Reward Program continues to recycle a high volume of units that provides a reliable source of savings for ComEd. Verified savings have decreased significantly based primarily on the lower savings per unit based on the regression equations specified in the Illinois Statewide TRM version 1.0. This regression specification is based on the metering study completed by the evaluation in PY4. Net savings have also decreased slightly due to the application of the lower net-to-gross ratios from the PY3 evaluation.

Program Savings Goals Attainment

Finding 1. The starting PY5 net energy savings goal for this program was 21,000 MWh, which represents a 38% decrease from the final PY4 goal of 33,371 MWh. This reduction is reflective of the much lower per-unit savings values based on the regression formula in the Illinois Statewide TRM version 1.0. The ex-ante net energy savings was considerably higher than the goal, at 31,869 MWh.

Finding 2. The PY5 verified gross energy savings is 44,674 MWh, while evaluation-verified net savings is 30,531 MWh, which is 68% of the verified gross savings.

Gross Realization Rates

Finding 3. The Gross realization rate is based on the Verification rate only. This value is based on responses to a phone survey question regarding whether the respondent recalled having the program pick up their units. In total, .3% (1 of 329) of participants surveyed said that the program did not pick up their units, resulting in a Verification rate of 99.7% (i.e., 0.997).

Finding 4. Initial research on the verification rate was based a single question, which proved to be insufficient to determine whether units had, in fact, been picked up and recycled by the program.

Recommendation 1. Additional follow up questions should be added to the survey for those that answer "no" to the verification question to probe in more detail on their answer. For example:

- What was your understanding of this question? why did you answer don't know?
- Do you still have your old refrigerator or freezer? Where is it now? Is it plugged in and working in your home?
- [IF APPLICABLE] Why wasn't it picked up?

Recommendation 2. In addition, other compelling evidence should be examined. This primarily consists of program records (i.e., cancelled checks, photos of the recycled unit, and other similar documentation that the unit was, in fact, recycled).

Net-to-Gross Ratio

Finding 5. The NTG rate found in this evaluation is 68% and is based on the net-to-gross ratio from the PY3 program evaluation. The Evaluation Research Findings NTG ratios are 0.56 for refrigerators (based on a weighted average of Retailer NTGR of 0.17 and Non-Retailer NTGR of 0.79), 0.52 for freezers (based on a weighted average of Retailer NTGR

of 0.21 and Non-Retailer NTGR of 0.59) and 0.50 for room ACs for a total NTG ratio of 0.56. The Research Findings NTG ratio is a weighted average of participating customer and retailer responses to survey questions. It also includes a term for Program-Induced Replacements.

Recommendation 3. Free ridership in this program can be reduced by increasing marketing to those with secondary units and reducing participation by those who are replacing existing primary units. However, this comes at a cost, since the pool of available participants would be reduced significantly by doing so.

Energy and Demand Savings Estimates

Finding 6. Based on the specified regression in the TRM, a small number of units have negative energy and demand consumption. These are a function of the unit size and age, and comprise a very small fraction of the population. For such units with negative consumption, the average consumption of similar sized and aged units was used in place of the negative value.

Finding 7. Gross peak demand savings are 6.15 MW and net savings are 4.20 MW. As with energy savings, these are significantly down from PY4 savings values and are reflective of the much lower per-unit savings values based on the regression formula in the Illinois Statewide TRM version 1.0.

Recommendation 4. For units with negative consumption, we recommend that additional language be added to the TRM to address this situation. The language could be: "The regression based savings algorithm produces negative unit energy or demand consumption values for a very small percentage of units. For such units with negative consumption, the average consumption of similar size and age units should be used in place of the negative value. For example, refrigerator units with negative consumption have an average age of 21 years and average size of 13 cubic feet so the average consumption of units 20-22 years old and 12-14 cubic feet should be used instead of regression-based estimates."

Recommendation 5. We recommend that the participating retailers capture the prior location of the units and if the unit is a primary or secondary unit. Nearly 5,000 records were missing this information and most of the missing records were picked up by participating retailers. This is important data that is used in the Illinois Statewide TRM version 2.0 regression model and will be applied in the PY6 evaluation.

Program Participation

Finding 8. Program participation remains healthy but is down 4,833 participants (10%) from PY4.

7. Appendix

7.1 Glossary

High Level Concepts

Program Year

- EPY1, EPY2, etc. Electric Program Year where EPY1 is June 1, 2008 through May 31, 2009, EPY2 is June 1, 2009 through May 31, 2010, etc.
- GPY1, GPY2, etc. Gas Program Year where GPY1 is June 1, 2011 through May 31, 2012, GPY2 is June 1, 2012 through May 31, 2013.

There are two main tracks for reporting impact evaluation results, called Verified Savings and Impact Evaluation Research Findings.

Verified Savings composed of

- Verified Gross Energy Savings
- Verified Gross Demand Savings
- Verified Net Energy Savings
- Verified Net Demand Savings

These are savings using deemed savings parameters when available and after evaluation adjustments to those parameters that are subject to retrospective adjustment for the purposes of measuring savings that will be compared to the utility's goals. Parameters that are subject to retrospective adjustment will vary by program but typically will include the quantity of measures installed. In EPY5/GPY2 the Illinois TRM was in effect and was the source of most deemed parameters. Some of ComEd's deemed parameters were defined in its filing with the ICC but the TRM takes precedence when parameters were in both documents.

Application: When a program has deemed parameters then the Verified Savings are to be placed in the body of the report. When it does not (e.g., Business Custom, Retrocommissioning), the evaluated impact results will be the Impact Evaluation Research Findings.

Impact Evaluation Research Findings composed of

- Research Findings Gross Energy Savings
- Research Findings Gross Demand Savings
- Research Findings Net Energy Savings
- Research Findings Net Demand Savings

These are savings reflecting evaluation adjustments to any of the savings parameters (when supported by research) regardless of whether the parameter is deemed for the verified savings analysis. Parameters that are adjusted will vary by program and depend on the specifics of the research that was performed during the evaluation effort.

Application: When a program has deemed parameters then the Impact Evaluation Research Findings are to be placed in an appendix. That Appendix (or group of appendices) should be labeled Impact Evaluation Research Findings and designated as "ER" for short. When a program does not have deemed parameters (e.g., Business Custom, Retrocommissioning), the Research Findings are to be in the body of the report as the only impact findings. (However, impact findings may be summarized in the body of the report and more detailed findings put in an appendix to make the body of the report more concise.)

Program-Level Savings Estimates Terms

N	Term Category	Term to Be Used in Reports‡	Application†	Definition	Otherwise Known As (terms formerly used for this concept)§
1	Gross Savings	Ex-ante gross savings	Verification and Research	Savings as recorded by the program tracking system, unadjusted by realization rates, free ridership, or spillover.	Tracking system gross
2	Gross Savings	Verified gross savings	Verification	Gross program savings after applying adjustments based on evaluation findings for only those items subject to verification review for the Verification Savings analysis	Ex post gross, Evaluation adjusted gross
3	Gross Savings	Verified gross realization rate	Verification	Verified gross / tracking system gross	Realization rate
4	Gross Savings	Research Findings gross savings	Research	Gross program savings after applying adjustments based on all evaluation findings	Evaluation-adjusted ex post gross savings
5	Gross Savings	Research Findings gross realization rate	Research	Research findings gross / ex-ante gross	Realization rate
6	Gross Savings	Evaluation-Adjusted gross savings	Non-Deemed	Gross program savings after applying adjustments based on all evaluation findings	Evaluation-adjusted ex post gross savings
7	Gross Savings	Gross realization rate	Non-Deemed	Evaluation-Adjusted gross / ex-ante gross	Realization rate
1	Net Savings	Net-to-Gross Ratio (NTGR)	Verification and Research	1 – Free Ridership + Spillover	NTG, Attribution
2	Net Savings	Verified net savings	Verification	Verified gross savings times NTGR	Ex post net
3	Net Savings	Research Findings net savings	Research	Research findings gross savings times research NTGR	Ex post net
4	Net Savings	Evaluation Net Savings	Non-Deemed	Evaluation-Adjusted gross savings times NTGR	Ex post net
5	Net Savings	Ex-ante net savings	Verification and Research	Savings as recorded by the program tracking system, after adjusting for realization rates, free ridership, or spillover and any other factors the program may choose to use.	Program-reported net savings

‡ "Energy" and "Demand" may be inserted in the phrase to differentiate between energy (kWh, Therms) and demand (kW) savings.

† **Verification** = Verified Savings; **Research** = Impact Evaluation Research Findings; **Non-Deemed** = impact findings for programs without deemed parameters. We anticipate that any one report will either have the first two terms or the third term, but never all three.

§ Terms in this column are not mutually exclusive and thus can cause confusion. As a result, they should not be used in the reports (unless they appear in the "Terms to be Used in Reports" column).

Individual Values and Subscript Nomenclature

The calculations that compose the larger categories defined above are typically composed of individual parameter values and savings calculation results. Definitions for use in those components, particularly within tables, are as follows:

Deemed Value – a value that has been assumed to be representative of the average condition of an input parameter and documented in the Illinois TRM or ComEd's approved deemed values. Values that are based upon a deemed measure shall use the superscript "D" (e.g., delta watts^{D}, HOU-Residential^{D}).

Non-Deemed Value – a value that has not been assumed to be representative of the average condition of an input parameter and has not been documented in the Illinois TRM or ComEd's approved deemed values. Values that are based upon a non-deemed, researched measure or value shall use the superscript "E" for "evaluated" (e.g., delta watts^{E}, HOU-Residential^{E}).

Default Value – when an input to a prescriptive saving algorithm may take on a range of values, an average value may be provided as well. This value is considered the default input to the algorithm, and should be used when the other alternatives listed for the measure are not applicable. This is designated with the superscript "DV" as in X^{DV} (meaning "Default Value").

Adjusted Value – when a deemed value is available and the utility uses some other value and the evaluation subsequently adjusts this value. This is designated with the superscript "AV" as in X^{AV}

Glossary Incorporated From the TRM

Below is the full Glossary section from the TRM Policy Document as of October 31, 2012[5].

Evaluation: Evaluation is an applied inquiry process for collecting and synthesizing evidence that culminates in conclusions about the state of affairs, accomplishments, value, merit, worth, significance, or quality of a program, product, person, policy, proposal, or plan. Impact evaluation in the energy efficiency arena is an investigation process to determine energy or demand impacts achieved through the program activities, encompassing, but not limited to: *savings verification*, *measure level research*, and *program level research*. Additionally, evaluation may occur outside of the bounds of this TRM structure to assess the design and implementation of the program.

Synonym: **Evaluation, Measurement and Verification (EM&V)**

> **Measure Level Research**: An evaluation process that takes a deeper look into measure level savings achieved through program activities driven by the goal of providing Illinois-specific research to facilitate updating measure specific TRM input values or algorithms. The focus of this process will primarily be driven by measures with high savings within Program Administrator portfolios, measures with high uncertainty in TRM input values or algorithms (typically informed by previous savings verification activities or program level research), or measures where the TRM is lacking Illinois-specific, current or relevant data.
>
> **Program Level Research**: An evaluation process that takes an alternate look into achieved program level savings across multiple measures. This type of research may or may not be

[5] IL-TRM_Policy_Document_10-31-12_Final.docx

specific enough to inform future TRM updates because it is done at the program level rather than measure level. An example of such research would be a program billing analysis.

Savings Verification: An evaluation process that independently verifies program savings achieved through prescriptive measures. This process verifies that the TRM was applied correctly and consistently by the program being investigated, that the measure level inputs to the algorithm were correct, and that the quantity of measures claimed through the program are correct and in place and operating. The results of savings verification may be expressed as a program savings realization rate (verified ex post savings / ex ante savings). Savings verification may also result in recommendations for further evaluation research and/or field (metering) studies to increase the accuracy of the TRM savings estimate going forward.

Measure Type: Measures are categorized into two subcategories: custom and prescriptive.

Custom: Custom measures are not covered by the TRM and a Program Administrator's savings estimates are subject to retrospective evaluation risk (retroactive adjustments to savings based on evaluation findings). Custom measures refer to undefined measures that are site specific and not offered through energy efficiency programs in a prescriptive way with standardized rebates. Custom measures are often processed through a Program Administrator's business custom energy efficiency program. Because any efficiency technology can apply, savings calculations are generally dependent on site-specific conditions.

Prescriptive: The TRM is intended to define all prescriptive measures. Prescriptive measures refer to measures offered through a standard offering within programs. The TRM establishes energy savings algorithm and inputs that are defined within the TRM and may not be changed by the Program Administrator, except as indicated within the TRM. Two main subcategories of prescriptive measures included in the TRM:

Fully Deemed: Measures whose savings are expressed on a per unit basis in the TRM and are not subject to change or choice by the Program Administrator.

Partially Deemed: Measures whose energy savings algorithms are deemed in the TRM, with input values that may be selected to some degree by the Program Administrator, typically based on a customer-specific input.

In addition, a third category is allowed as a deviation from the prescriptive TRM in certain circumstances, as indicated in Section 3.2:

Customized basis: Measures where a prescriptive algorithm exists in the TRM but a Program Administrator chooses to use a customized basis in lieu of the partially or fully deemed inputs. These measures reflect more customized, site-specific calculations (e.g., through a simulation model) to estimate savings, consistent with Section 3.2.

7.2 Detailed Impact Research Findings and Approaches

This research report presents PY5 program savings using the part-use factors and net-to-gross ratios derived from the PY5 survey of program participants. The savings estimates are based on the same regression-based coefficients used to develop the evaluation-verified estimate of savings but incorporate a correction for a small number of units with negative savings. We also present trends in unit characteristics over time and summarize any significant changes in program trends.

7.2.1 Gross Impact Methods

Unit Energy Consumption (UECs) and Demand. The Research Report Gross Impact savings estimates are based on the same Illinois 2012 TRM v 1.0 regression based coefficients that were used to develop the evaluation-verified Gross Impact savings estimates. Refer to Section 3.1 for more details. The one adjustment to this method was for the small fraction of units with negative savings resulting from this method. The specific treatment for those units is discussed below.

Negative Unit Energy Consumption. The regression based savings algorithm does produce a small amount of negative unit energy consumption values. A total of 447 (0.9%) units have negative consumption and 364 (0.8%) have negative energy demand. The negative UECs are primarily single door and manual defrost refrigerators or those that are less than 10 years old and less than 15 cubic feet in size. There are a very small number of freezers (18) with negative UECs. The predominant features are small size (less than 10 cubic feet) and relatively young (less than 15 years old).

For such units with negative consumption, the average consumption of similar sized and aged units was used in place of the negative value. For example, refrigerator units with negative consumption have an average age of 21 years and average size of 13 cubic feet so the average consumption of units 20-22 years old and 12-14 cubic feet was used instead.

Negative Unit Demand. A total of 364 units also have negative kW demand, specifically those that are less than 10 or more than 70 years old and with manual defrost. There is some non-linearity in age which is why the squared age variable appears in the regression model. This non-linearity appears to be causing most of the negative demand estimations. Similar to the treatment for units with negative energy consumption, the average kW value of similar sized and aged units are used in place of the negative kW demand value.

Part-use factors. The Research Findings part-use factors are based on the PY5 participant survey findings. These account for the fact that a unit that would have stayed in use would have been in use only part of the time. For example, the savings due to removal of a unit that would have been used only three months of the year is only one-quarter (3/12) the savings associated with full-year use (assuming essentially constant use over the year for a full-use unit). The part-use factor is used to adjust gross savings UECs to yield estimates of annualized gross savings that can be attributed to the program.

Refrigerators. The assumption is that any refrigerator that would otherwise have been kept in use would have been used as a secondary, not as a primary refrigerator. Therefore, the part-use for all primary refrigerators that would otherwise have been kept is set at the average part-use reported by

participants who disposed of a secondary refrigerator. This part-use was the number of months, divided by 12, that the participant reported the unit would have been plugged in and running had the program not picked it up. For PY5, this average was determined to be 92% or 0.92. As table 7-3 indicates, the UEC adjusted for the part-use factor yields an average refrigerator consumption of 944 kWh per year.

Freezers. For freezers, the average part-use factor is based on a similar question for all participants who disposed of a freezer. For PY5, this average was determined to be 83% or 0.83. The supplemental data collected in the survey provide no further insight into the part-year usage, nor do the tracking data. Adjusted for part-use, the average freezer consumes 1,032 kWh per year.

Table 7-1. Research Findings Gross Savings (UECs) Adjusted for Part-Use

Appliance Type	Gross Savings (UECs)	Part-Use Factor	UEC Adjusted for Part-Use
Refrigerators	1,026	92%	944
Freezers	1,243	83%	1,032

Source: Evaluation Team analysis.

When asked, the predominant response from participants was that they would have used the unit 'always' if the program had not picked it up as shown in Table 7-2 below, which shows the distribution of unit usage by appliance type and frequency of use for both refrigerators and freezers.

Table 7-2. Frequency of Usage in the Absence of the Program

Appliance Type	Never	1 to 3 months	4 to 6 months	7 to 9 months	10 to 12 months	Always	N
Refrigerators	4%	4%	1%	1%	0%	89%	235
Freezers	12%	4%	1%	0%	0%	82%	73

Source: Evaluation Team analysis.

Verification rate. The Verification rate is based on responses to a phone survey question regarding whether the respondent recalled having the program pick up their units. If the respondent indicated that the program did not pick up any units, then they were thanked for their time and the survey was ended without gathering additional information.

7.2.2 Gross Impact Results

The Research findings verified gross energy savings for PY5 is 46,095 MWh, while the coincident peak demand savings is 6.35 MW. The tables below present the details behind these estimates.

Table 7-3. PY5 Research Findings Gross Impact Parameter and Energy Savings Estimates (MWh)

Gross and Net Impact Parameter and Savings Estimates	Refrigerators	Freezers	Room AC	Total Program
Total units recycled through the Program	41,333	6,836	636	48,805
Research Findings Annual kWh Savings Impacts				
Research Findings annual Gross kWh savings per unit (full-load operating hours)	1,026	1,243	232	---
Part-Use Factor	92%	83%	1	---
Verification Factor	99.7%	99.7%	99.7%	99.7%
Research Findings annual Gross kWh savings per unit adjusted for part-use	941	1,029	232	---
Research Findings Program Gross MWh	**38,911**	**7,036**	**148**	**46,095**

Source: Evaluation Team analysis.

Table 7-4. PY5 Research Findings Gross Impact Parameter and Demand Savings Estimates (kW)

Gross and Net Impact Parameter and Savings Estimates	Refrigerators	Freezers	Room AC	Total Program
Total units recycled through the Program	41,333	6,836	636	48,805
Verification Factor	99.7%	99.7%	99.7%	
Verified Participation Units	41,209	6,815	634	48,659
Research Findings Annual kW Savings Impacts				
Annual Gross kW savings per unit (full-load operating hours)	0.13	0.13	0.04	---
Research Findings Program Gross MW	**5.42**	**0.91**	**0.03**	**6.35**

Source: Evaluation Team analysis.

7.2.3 Net Program Impact Methods

The primary objective of the research findings net savings analysis for the FFRR program was to determine the program's net effect on customers' electricity usage. This requires estimating what would have happened in the absence of the program. Thus, after gross program impacts adjusted for part-use have been assessed, net program impacts are derived by estimating a Net-to-Gross (NTG) ratio which quantifies the percentage of the gross program impacts that can reliably be attributed to the program.

The NTG assessment of retailer-sourced units has been expanded in PY5, with a goal of assessing program influence in all cases where an existing unit has been replaced. Such an inquiry included both the three participating retailers in the program, and two of the largest nonparticipating retailers associated with unit replacements. Responses from the existing participant survey were used to guide the analytical approach for the retailer associated units, as well as the non-replaced units picked up by JACO at customers' homes. The current "no program" question battery was expanded to include

additional probing surrounding the participating customer's disposal options associated with the retailer they purchased the new unit from, and their rationale for recycling the unit via ComEd's program rather than choosing to have the retailer remove it. This helps to ensure consistency and a fuller understanding of the responses given to the critical survey question used to determine free ridership for the program.

Data sources included the following:

- *Telephone surveys with participating customers.* As in previous years, we relied heavily on findings from telephone surveys of participating customers to determine how their units would have been disposed of if the program hadn't picked them up.
- *In-depth interviews with participating retailers.* These findings were used to determine the disposition of used appliances absent the program for those who purchase a new unit via these channels and who indicated they would have had the retailer remove the unit if the ComEd program had not been available.
- *Telephone surveys with nonparticipating retailers associated with unit replacements.* The evaluation team also obtained contact information, and conducted interviews with the two largest nonparticipating retailers associated with unit replacements. These interviews shed light on the disposition of used appliances absent the program **for those participants that indicate that absent ComEd's program, they would have given the unit away to the retailer** they bought their new unit from. In such cases, the NTG ratio is based on that retailer's own disposal practices absent the program, which is revealed during these phone surveys.

The retailer interviews and participating customer phone surveys provide all inputs needed for the calculation of the program's net-to-gross ratio. The *participating customer survey* provided the self-reported percentage of units that: (1) would have been kept and used; (2) would have been kept by a household but not used; and (3) would have been discarded by a household through a method in which the refrigerator would have been destroyed. The retailer interviews provide the percentage of units that are discarded and destroyed by each retailer absent the program. Units that would have been kept but not used, and those that would have been discarded and destroyed absent ComEd's program, are considered free riders. The program's NTG ratio is then calculated from these results.

The program NTG ratio is a weighted average resulting from calculations for two categories of participants:

1. Participating customer survey responses are used directly in the calculation of the NTGR for three categories of participants:
   - Those who did not replace their unit, and
   - Those who replaced it but indicated they would have used a disposal method not involving the retailer they bought the new unit from.
   - Those who replaced it, would have used a disposal method involving the retailer, but where an interview with the retailer was not completed.

   This includes participants who indicated they would have otherwise sent the unit to a recycling facility, taken the unit to a landfill, or used another method that would have permanently removed the unit from the grid.

2. For the remaining customers, the NTG ratio was determined based on the disposal practices of each retailer interviewed. Those remaining are ones who would have used a method involving the retailer they bought the replacement unit from, would have used a disposal

method involving the retailer, and where an interview with the retailer was completed. Interviews were completed with 5 major retailers that sold replacement units to participating customers. NTG ratios were then calculated for each retailer firm.

Participant spillover was not assessed. For this program, because the program approach does not support a theory for how meaningful spillover might occur, and because it does seem unlikely to be significant, we have not estimated spillover.

Of those survey respondents that replaced their units, some 41% (82 of 199) indicated they would have had their unit removed by the dealer (i.e., retailer). The remaining 59% (117 of 199) would have used various other methods such as donating it to a charity, hauling it to the dump and recycling center, hiring someone to haul it away, and keeping it stored unplugged.

Participating Customer findings. In total, 50 out of 237 refrigerator respondents (21%) and 31 of 75 freezer respondents (41%) revealed they would have used a method to dispose of their unit that would have permanently destroyed it, indicating they are free riders. Resulting NTG ratios for non-replacer recycling customers and those that replaced a unit are 0.79 for refrigerators, and 0.59 for freezers. These values were applied to both non-replaced units, and those who would have used a method not involving the retailer they bought the replacement unit from in calculating the Research Findings program NTG ratio.

Retailer findings. A total of five retailers that provided replacement units to participating customers were interviewed thoroughly to learn of their appliance disposal practices in the absence of ComEd's program. Retailers were asked a series of questions regarding the following:

- Pickup and disposal services for replaced units
    - Charges, if any for such services
    - Percentage of customers that receive such services
- Recycling and/or deconstruction of units picked up by the retailer
    - Approach for units outside of ComEd's program – percentage of units affected
    - Approach prior to the start-up of ComEd's program – percentage of units affected
- Other disposition of units
    - Percentage that are picked up by a hauler/third party and resold (i.e., remain grid connected)

Each retailer provided specific answers to each of these topic areas. In general, a high percentage of units turned over to retailers are being disposed of via a method that permanently removes them from the grid. Only a small percentage – the newest units in the best condition – are resold.

From this information, we were able to construct a retailer-specific NTG ratio, representing 1 minus the percentage of units that would otherwise have been recycled or deconstructed in the absence of ComEd's program. As indicated by the table below, the rate of recycling varies significantly by retailer. The five retailers interviewed represent over 48% of the new units purchased by program participants.

Table 7-5. PY5 Net-to-Gross Ratios for Participating Retailers

Retailer	Free Rider %	NTGR ratio	Percentage of Program Units (Survey based)
Retailer # 1 – local firm	99%	0.01	25%
Retailer #2 – national chain	70%	0.30	11%
Retailer #3 – national chain	55%	0.45	4%
Retailer #4 – national chain	85%	0.15	3%
Retailer #5– national chain	50%	0.50	4%
Total Retailer Units			**48%**

Source: Evaluation Team analysis.

It should be noted that an expanded market assessment is planned in the PY6 evaluation for the retailer segment. The objective is to develop a more complete picture of the program's impact on the secondary market for used refrigerators, both at the individual retailer level and across the market as a whole. This assessment will include a repeat of the non-participating customer survey of recent acquirers and disposers of secondary units, which was previously conducted in PY2. This information will provide more definitive information regarding the impacts of the program with respect to each retailer involved, and to the general marketplace.

Weighted Average NTGR. A weighted average of the two net-to-gross ratios are then calculated separately for refrigerators and freezers using the proportions of participants who fall into each of the 2 categories discussed previously. The proportion of participants in the retailer category (2) is combined for both refrigerators and freezers since the retailer interviews did not distinguish between unit type.

The formula for this calculation is: (NTGRnr * %nr) + (NTGRr * %r)

Where:

NTGRnr = non retailer-based net-to-gross ratio
%t = percentage of participants who receive non retailer-based net-to-gross ratio
NTGRr = retailer-based net-to-gross ratio
%r = percentage of participants who receive retailer-based net-to-gross ratio

The resulting NTGR is then applied to the average unit energy consumption per unit recycled by the respective retailers or by JACO and also weighted by the number of units recycled by each retailer or JACO. The result produces a weighted NTGR for refrigerators and freezers that takes into account both non-retailer and retailer based NTGRs. Table 7-5 presents the in non-retail and retailer based recycling channels and the resulting weighted NTGR by appliance type.

Table 7-6. PY5 Research Findings Net-to-Gross for Retailer and Non-Retailer Participants

Unit Type	NTGR Non-Retailer	NTGR Retailer	NTGR Weighted Average
Refrigerator	79%	17%	63%
Freezer	59%	21%	56%
Room ACs	50%		50%

Source: Evaluation Team analysis.

Program-induced replacements. The final NTG ratio also includes a term for program-induced replacements (PIR). This term accounts for the role played by the FFRR program and incentive in inducing a customer to replace their unit after the old unit was removed by the program and recycled. Such inducement could result from the program incentive, the convenience of the home pickup, or some other factor named by the respondent. Savings from participants who indicate that the program caused them to replace their old unit are reduced by the estimated consumption of the replacement unit. The consumption of the replacement units was estimated using the Energy Star Appliance Savings Calculator available on the Energy Star website. The average characteristics of new units captured in the survey are used for inputs into the Appliance Savings Calculator. Table 7-7 below illustrates the program-induced replacement calculation used for refrigerators.

Table 7-7: PY5 Program-Induced Replacement Calculation – Refrigerators

Replaced Recycled Unit?	Percent of Respondents	Program Induced Replacement?	Percent of Respondents	Percent of Total Population	Induced kWh/Unit	Number of Units	Total Induced kWh
Yes	71%	Yes	16%	11%	501	4,712	2,360,670
		No	84%	59%	0	24,386	0
No	29%			29%	0	12,034	0
Totals						41,333	2,360,670
Weighted Average Program Induced Replacement Factor (all units)						57	6%

If applied equally to all units, the program-induced replacement effect on the NTGR is a ***net reduction*** of 6% of savings for refrigerators and 3% for freezers. However, equal application of these full values would have resulted in a negative NTGR and negative net savings for units of Retailer #1. Therefore, a decision was made to apply the PIR in a way that it limited individual retailers to not less than zero savings. Therefore a PIR value of 1% was applied to units of Retailer #1 while slightly higher PIR values of 7% for refrigerators and 3% for freezers were applied to the remaining units in the program.

After accounting for Program Induced Replacements, the final program NTGRs are shown below in Table 7-8

Table 7-8: PY5 Research Findings Final Program Net-to-Gross Ratios

Unit Type	NTGR Non-Retailer	NTGR Retailer	NTGR Weighted Average
Refrigerator	73%	11%	56%
Freezer	56%	18%	53%
Room ACs	50%		50%

7.2.4 Net Program Impact Results

The research findings indicate that the PY5 net program savings is 25,593 MWh, which is 56% of the gross MWh research findings. The inclusion of the retailer-based- net-to-gross ratios in PY5 reduces the net savings attributable to the program since many of the major appliance retailers also recycle used units according to the retailer surveys. The research findings net MWh savings are 84% of the evaluation-verified net MWh savings.

Table 7-9. PY5 Research Findings Net Impact Parameter and Savings Estimates (MW)

Research Findings Annual Net MWh Savings Impacts	Refrigerators	Freezers	Room AC	Total Program
Research Findings Program Gross MWh	38,911	7,036	148	46,095
Free Ridership %	37%	44%	50%	
Program Induced Replacement %	7%	3%	N/A	
Net-to-Gross Ratio (1-Free Rider % - Program Induced %)	56%	53%	50%	56%
Total Fifth-Year Research Findings Net MWh Savings	**21,790**	**3,729**	**73.776**	**25,593**
Net MWh Savings Claimed by the Program	N/A	N/A	N/A	31,869
Research Findings Program Gross MW	5.42	0.91	0.03	6.35
Net-to-Gross Ratio (1-Free Rider %)	56%	53%	50%	56%
Total Fifth-Year Research Findings Net MW Savings	**3.03**	**0.48**	**0.01**	**3.53**

Source: Evaluation Team analysis.

7.2.5 Unit Characteristics

Both age (in years) and size (in cubic feet) are key explanatory variables that drive the savings estimates. In general, the older a unit is, the larger it is and the more electricity it uses. This is the case for two reasons:

1. Because of a change in energy efficiency standards in 1993, units built since that time are much more energy efficient than units made prior to the standards change.

2. There is degradation of a unit's efficiency over time, as the unit ages.

Table 7-10 and Table 7-11 below provide the age and size characteristics of the units collected in PY5 through ComEd's program.

The ages of refrigerators and freezers in PY5 are slightly older, but not significantly different than in PY4. More than half of refrigerators are between 16-30 years old. Freezers tend to be a little bit older than refrigerators with over half of the units between 21 and 35 years old. The room air conditioner units that were recycled in the program in PY5 tend to be slightly older than room air conditioner units recycled in PY4. There were significantly more units over 40 years old in PY5, which caused the average age of an AC unit in PY5 to be 34 years old compared to 30 in PY4.

The average size of refrigerators in the program is 19.2 cubic feet and 15.7 cubic feet for freezers. The size of units has not changed significantly since PY4.

Table 7-10. Age Characteristics of Recycled Appliances

Appliance Type	Age in Years									
	0 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31 to 35	36 to 40	Over 40	Average
Refrigerators	1%	6%	13%	18%	19%	15%	12%	7%	9%	**25.2**
Freezers	0%	2%	5%	10%	14%	21%	19%	13%	16%	**31**
Room Air Conditioners	0%	1%	6%	7%	16%	23%	17%	11%	21%	**34**

Source: Evaluation Team analysis of program tracking data.

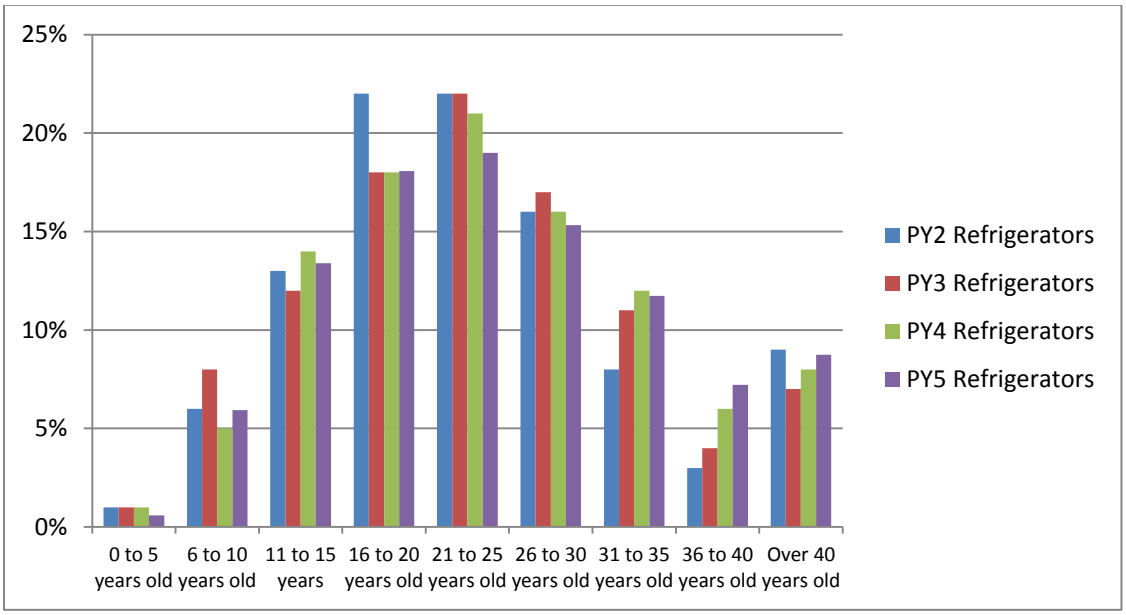
Table 7-11. Size Characteristics of Recycled Appliances

Appliance Type	10 cubic feet and smaller	11 to 15 cubic feet	16 to 20 cubic feet	21 cubic feet and larger	Average
Refrigerators	2%	13%	50%	35%	**19.2**
Freezers	12%	34%	45%	9%	**15.7**

Source: Evaluation Team analysis of program tracking data.

There is a slight trend towards older refrigerators in the program over time. This is most noticeable in Figure 7-1 in the 31-35 and 36-40 years old categories where each year has slightly more refrigerators in these age categories. This is somewhat of an anomaly given that the stock of older appliances has declined over time due to the program. However, the magnitude of the increase in the percentage of older units picked up is very small.

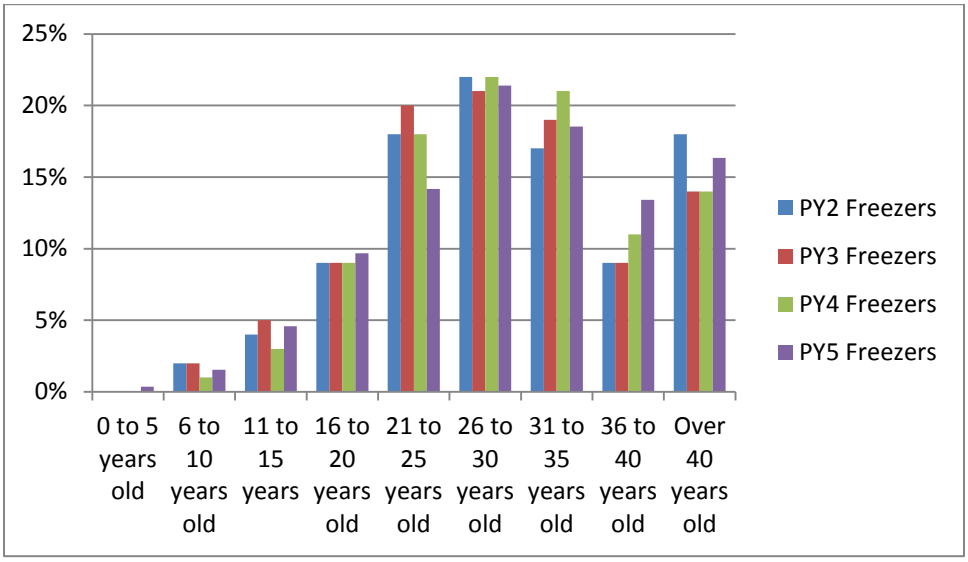
Figure 7-1. Age of Refrigerators



Source: Evaluation Team analysis.

There is also a slight trend towards older freezers in the program over time, which is most noticeable in the 36-40 years old category.

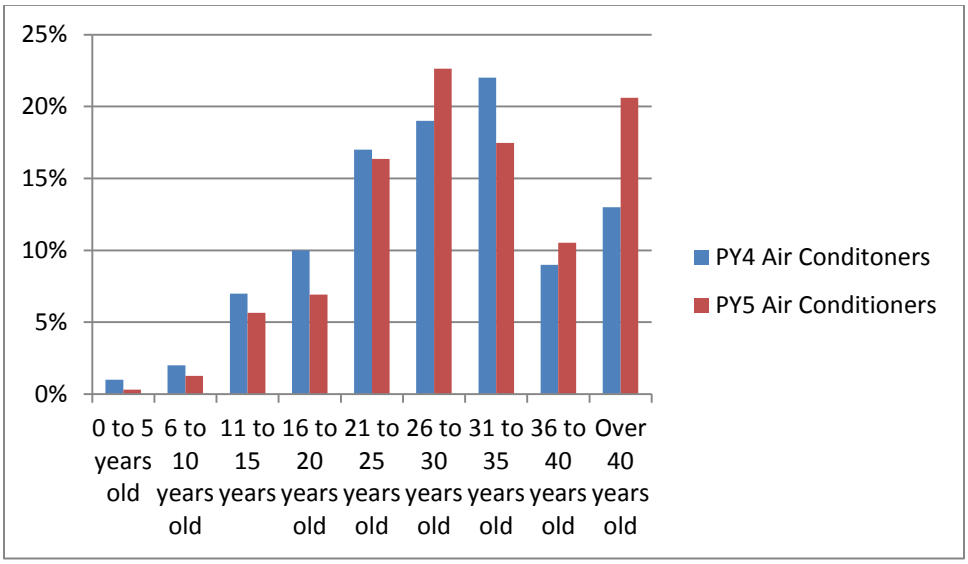
Figure 7-2. Age of Freezers



Source: Evaluation Team analysis.

With respect to room AC units, there is a significant difference in the number of air conditioners over 40 years old in the program from PY4 to PY5 which is evident in Figure 7-3.

Figure 7-3. Age of Room Air Conditioners



Source: Evaluation Team analysis.

7.3 Participant Survey Instrument

INT01:

Hello, this is $I from Opinion Dynamics calling on behalf of Commonwealth Edison company. This is not a sales call. May I please speak with <CNAME>? We are contacting customers who had refrigerators, freezers or room air conditioners removed through an appliance pick-up and recycling program offered by Commonwealth Edison. Are you the person who was most involved and familiar with the removal? (IF NO, NOT RIGHT PERSON: May I please speak to the person who would know the most about the removal? REPEAT INTRODUCTION AND CONTINUE) (IF YES, RIGHT PERSON:) We are conducting a study to evaluate Commonwealth Edison's appliance pick up and recycling program and would like to include your opinions. This is required by the Illinois Commerce Commission and will be used to verify the effectiveness of the program and to make improvements. (IF NEEDED: It will take about 15 minutes.) For quality control purposes this call may be monitored or recorded.

CONTINUE..... 91
Business/Residential phone (ADJUST)..... 11
Enter a substitute phone number 12
Initial refusal..... 13
Language problems 14
RESPONDENT SCHEDULED APPOINTMENT 15
Non-specific callback 16
HARD REFUSAL - DO NOT CALL 17
Cell Phone... Refused to do survey because it's a cell phone 18
Not available..... 19
Customer indicated called already..... 20
Customer said wrong number..... 21

INT51:

(CLICK CELL PHONE CALLBACK TO SCHEDULE A CALLBACK) _$Recall(RECALL="Hello, this is $I, from Opinion Dynamics. I was asked to call back at this time to conduct a survey. May I speak with <CNTC>? (CLICK CONTINUE WITH SURVEY)",CONDITION="INT51=51")

(Cell phone callback)..... 51
CONTINUE WITH SURVEY 93

C1:

C1. Are you currently talking to me on a regular landline phone or a cell phone?

Regular landline phone..... 1
Cell phone..... 2
(Don't know)..... 8
(Refused) 9

C2:

C2. Are you currently in a place where you can talk safely and answer my questions?

Yes..... 1
(No, schedule a callback) 2
(No, do not call back) 3
(Don't know, schedule a callback)..... 8
(Refused, schedule a callback) 9

QU1:

U1. Is ComEd your electric delivery company or do you receive electricity from someone else?

ComEd..... 1
Someone Else 2
(Don't Know) 8
(Refused) 9

QU2:

U2. Is your electricity supplier a municipal electric utility or a retail electricity supplier such as Bluestar, Direct Energy or another such supplier?

Municipal electric utility 1
Retail Energy Supplier 2
(Don't know)..... 8
(Refused) 9

QS1:

S1. Our records show that you had <READ_QS1> picked up by ComEd's subcontractor JACO. Is this correct??

Yes, correct..... 01
No - please specify in the box below..... 00
(Don't Know) 98
(Refused) 99

QS2A:

S2a. Next, I'm going to ask you some specific questions about the _$Recall(RECALL="REFRIGERATOR",CONDITION="REF_FL=1") _$Recall(RECALL="FREEZER",CONDITION="FRZ_FL=1") _$Recall(RECALL="AIR CONDITIONER",CONDITION="AC_FL=1") that was picked up.

CONTINUE..... 1

QS2B:

S2b. Next, I'm going to ask you some specific questions about appliances that were picked up by ComEd.

CONTINUE..... 1

QA0:

A0. According to our records, you had a refrigerator removed that was made by <REF_MAKE>. Is this correct?

Yes..... 01
No - please specify MANUFACTURER in the box below..... 00
(Don't Know) 98
(Refused) 99

QA1:

A1. At the time this refrigerator was picked up, were you using it as your main refrigerator, or had it been a secondary or spare? (NOTE TO INTERVIEWER: a main refrigerator is typically in the kitchen, a secondary or spare is usually kept someplace else and might or might not be running. If the person recently bought a new main refrigerator and was just waiting for the old one to be picked up, it should be classified as "main.")

Main 1
Secondary or Spare 2
(Don't Know) 8
(Refused) 9

QA2:

A2. How long had you been using this refrigerator as a secondary or spare? (RECORD IN YEARS) (IF NEEDED: If respondent is confused, reinforce that "how long had it been a spare when you decided to get rid of it."]

(Less than one year) 00
(Don't know) 98
(Refused) 99

QA3:

A3. Thinking just about the past year, was the spare refrigerator plugged in and running...

All the time 1
For special occasions only 2
During certain months of the year only, or 3
Was it never plugged in and running? 4
(Don't Know) 8
(Refused) 9

QA4:

A4. If you add up the total time your spare refrigerator was plugged in and running during the last 12 months that you had it, about how many total months would that be? Your best estimate is okay. (GET NEAREST MONTH OR HALF MONTH)

(Less than 1 month) 0000
(Don't know) 9998
(Refused) 9999

QA4A:

A4a. Was the refrigerator running during the summer or was it mainly running during other times of the year?

Running during the summer 1
Mainly running other times of the year 2
(Don't Know) 8
(Refused) 9

QA5:

A5. Where would the refrigerator have been located if it had not been removed by ComEd? (IF NEEDED: If the refrigerator was your primary unit, we're interested in whether you would have left it in the kitchen or moved it to another room)

(Kitchen)..... 01
(Garage)..... 02
(Porch/Patio)..... 03
(Basement)..... 04
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QA5B:

A5B. Was the space heated or not?

Yes..... 1
No 2
(Yes - Heated part of the year) 3
(Don't Know) 8
(Refused) 9

QA5C:

A5C. Was the space air-conditioned or not?

Yes..... 1
No 2
(Yes - Air conditioned part of the year)..... 3
(Don't Know) 8
(Refused) 9

QA6:

A6. How old was the refrigerator when ComEd removed it? (RECORD IN YEARS)

(Less than one year)..... 00
(Don't know)..... 98
(Refused) 99

QA7:

A7. Did you replace the _$Recall(RECALL="spare",CONDITION="QA1=2") refrigerator that ComEd picked up with another _$Recall(RECALL="secondary or spare",CONDITION="QA1=2") one?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QPI1:

PI1. Were you planning to replace your refrigerator before you decided to recycle your existing unit through ComEd's program?

Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QPI1A:

PI1A. Just to confirm: you are saying that you WOULD have replaced your old refrigerator with or without ComEd's program, is that correct?

Correct, I would have replaced it either way..... 1
Incorrect, I would not have replaced it without ComEd's program..... 2
(Don't know)..... 8
(Refused)..... 9

QPI1B:

PI1B. Just to confirm: you are saying that you would NOT have bought a new refrigerator independent of ComEd's program, is that correct?

Correct, I would not have replaced it without ComEd's program..... 1
Incorrect, I would have replaced it either way..... 2
(Don't know)..... 8
(Refused)..... 9

QPI1C:

PI1C. What was it about ComEd's program that encouraged you to buy the replacement unit? Was it...

The $35 program incentive..... 01
The convenience of the home pick-up of the old unit, or..... 02
Something else (please specify)..... 00
(Nothing in ComEd's program encouraged me to buy a replacement unit)..... 96
(Don't know)..... 98
(Refused)..... 99

QA7A:

A7A. What is the name and location of the retailer that you purchased the replacement unit from?

(Please enter response in the box below)..... 00
(Don't know)..... 98
(Refused)..... 99

QA8AA:

A8aa. Did you install the replacement refrigerator before or after the old refrigerator was picked up?

before..... 1
after..... 2
(Got it the same day)..... 3
(Don't Know)..... 8
(Refused)..... 9

QA8A:

A8a. How long <QA8AA> the old one was picked up did you install the replacement refrigerator?

(Same day)..... 01
(Within one to two weeks) 02
(Within one month) 03
(Within two to three months)..... 04
(Within four to six months) 05
(Within six to twelve months/one year)..... 06
(More than one year later) 07
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QA8B:

A8b. Was the replacement refrigerator brand new or used?

Brand new..... 1
Used..... 2
(Don't Know) 8
(Refused) 9

QA8C:

A8c. Does your replacement refrigerator have...

A single door, with a freezer compartment inside, ... 01
Two doors, side by side, (IF NEEDED: with a freezer on one side and a refrigerator on another) 02
A top freezer, or (IF NEEDED: two doors, with a freezer on the top and the refrigerator on the bottom) 03
A bottom freezer? (IF NEEDED: two doors, with a freezer on the bottom and refrigerator on the top) 04
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QA8D:

A8d. Is the replacement refrigerator frost free or manual defrost?

Frost free 01
Manual defrost..... 02
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QA8E:

A8e. What size is this replacement refrigerator in cubic feet? (IF NEEDED: Your best estimate is fine. CLARIFY FRACTIONS TO GET TO NEAREST NUMBER).

Less than 16 cu. ft..... 01
16 - 19 cu. ft. 02
20 - 22 cu. ft. 03
23 - 25 cu. ft. 04
Greater than 25 cu. ft. 05
(Other: specify)..... 00
(Don't know) 98
(Refused) 99

QA8E1:

A8e1. Is your replacement refrigerator larger, smaller or the same size as the one it replaced?

Larger 1
Smaller 2
Same Size 3
(Don't Know) 8
(Refused) 9

QA8F:

A8f. Was getting the replacement a major reason you decided to discard the old one?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QA8G:

A8g. How old is this replacement refrigerator? (RECORD IN YEARS)

(Less than one year)..... 00
(Don't know)..... 98
(Refused) 99

TQA9:

Now let's get back to your old refrigerator that was removed by ComEd.

CONTINUE..... 1

QA9:

A9. When you first heard about ComEd's Appliance Recycling Program, were you already considering getting rid of this refrigerator? This could have been by selling it, giving it away, having someone pick it up, or taking it to the dump or a recycling center.

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QA10A:

A10a. If you had been unable to get rid of your refrigerator through the ComEd appliance recycling program, would you have still gotten rid of the refrigerator, or would you have kept it?

Gotten rid of it 1
Kept it 2
(Don't Know) 8
(Refused) 9

QA10B:

A10b. If the ComEd program hadn't been available, would you have gotten rid of the refrigerator within 6 months of when you did, within a year of when you did, or would it have taken longer than a year for you to get rid of this refrigerator?

Within 6 months 1
Within a year 2
Over a year 3
(Don't know) 8
(Refused) 9

TQB1:

I am now going to read a list of alternative ways that you COULD have disposed of this refrigerator. For each, tell me if this is a method you had CONSIDERED using or doing.

CONTINUE..... 1

QB1_1:

B1_1. Did you consider: Selling it?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QB1_2:

B1_2. Did you consider... Giving it away for free?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QB1_3:

B1_3. Did you consider... Having it removed by the dealer you got your new or replacement refrigerator from?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QB1_4:

B1_4. Did you consider... Taking it to a dump or landfill, or a recycling center?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QB1_5:

B1_5. Did you consider... Hiring your garbage collector or someone else to haul it away?

Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QB1_6:

B1_6. Did you consider... Keeping it?

Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QB1A:

B1a. You said you considered selling your refrigerator. Did you consider selling the refrigerator to an appliance dealer, or to a private party (like a friend, relative or by running an ad)?

Dealer..... 1
Private party (friend, relative, or by running ad)..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QB1B:

B1b. You said you considered giving away your refrigerator. Did you consider giving it to a private party (like a friend, relative or by running an ad), or to a charitable organization? (IF NEEDED: examples of a charitable organization could be Goodwill Industries or a Church)

Private party (friend, relative or by running an ad)..... 1
Charitable organization..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QB1AB:

Have you ever heard of Craigslist.com? (IF NEEDED: Craigslist.com is a website that is used for buying, selling and giving away new and used items. It performs functions similar to classified ads in newspapers.)

Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QB1AC:

Have you ever used Craigslist to buy, sell or give away used furniture or appliances?
Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QB1AC1:

What did you use it for?
Please specify in the box below..... 00
(Don't know)..... 98
(Refused)..... 99

QB1AD:

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your refrigerator?
(Yes - would have sold on Craigslist.com)..... 01
(Yes - would have given away on Craiglist.com)..... 02
(No)..... 03
(Other: Record Verbatim)..... 00
(Don't know)..... 98
(Refused)..... 99

QB1AD1:

How much would you have sold it for?
(Don't know)..... 9998
(Refused)..... 9999

QB1C:

B1c. You said you considered taking away the refrigerator. Did you consider taking it to a dump or landfill, or to a recycling center?
Dump/landfill..... 1
Recycling Center..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QB1D:

B1d. You said you considered keeping the refrigerator. Did you consider storing it unplugged, or using it as a spare?
Storing it unplugged..... 1
Using it as a spare..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QB7:

B7. Now suppose that ComEd appliance recycling program hadn't been available. Which one of these alternatives that we've just discussed would you have been MOST LIKELY to do, if the ComEd appliance recycling program had not been available?

Selling it to a private party 01
Sell it to an appliance dealer 02
Give it away to a private party 03
Give it away to a charity organization, such as Goodwill Industries or a church .. 04
Have it removed by the dealer you got your new or replacement refrigerator from05
Haul it to the dump or landfill 06
Haul it to the recycling center 07
Hired your garbage collector or someone else to haul it away 08
Keep it and store it unplugged 09
Keep it and use it as a spare 10
(Some other way, specify) 00
(Don't know) 98
(Refused) 99

QB4B:

B4B. You mentioned _$Recall(RECALL="you would have kept this refrigerator and used it as a spare",CONDITION="QB7=10")_$Recall(RECALL="you considered keeping this refrigerator and using it as a spare",CONDITION="QB1D=2,3 AND NOT QB7=10") if the ComEd appliance recycling program weren't available. For how many years would you have used this refrigerator as a spare? (IF NEEDED: Your best estimate is fine.) (RECORD IN YEARS)

(Until it broke, indefinitely) 77
(Less than 1 year) 00
(Don't know) 98
(Refused) 99

QB4C:

B4C. Where would this refrigerator have been located if you hadn't gotten rid of it and had used it as a spare? (CLARIFY: What room? IF NEEDED: Your best estimate is fine.)

(Kitchen) 01
(Garage) 02
(Porch) 03
(Basement) 04
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QB4D:

B4D. Would this have been a heated space?

Yes 1
No 2
(Yes - Part of the year) 3
(Don't Know) 8
(Refused) 9

QB4E:

B4E. Would this have been an air-conditioned space?
Yes..... 1
No..... 2
(Yes - Part of the year) 3
(Don't Know) 8
(Refused) 9

QB8:

B8. You mentioned that you considered selling your refrigerator to _$Recall(RECALL="an appliance dealer",CONDITION="QB1A=1")_$Recall(RECALL="a private party",CONDITION="QB1A=2")_$Recall(RECALL="an appliance dealer or private party",CONDITION="QB1A=3"). Did you actually attempt to sell your refrigerator in this way before participating in the program?
Yes..... 1
No..... 2
(Don't Know) 8
(Refused) 9

QB8A:

B8a. Did you attempt to trade in or sell the refrigerator to an appliance dealer, or to a private party? (IF NEEDED: Private party could be a friend, family member, neighbor or someone you find through running an ad)
To a dealer..... 1
To a private party 2
Both..... 3
(Don't Know) 8
(Refused) 9

QB8B:

B8b. Why did you not follow through with this transaction?
(Couldn't find an interested dealer/non-dealer at the price I wanted) 01
(Couldn't find an interested dealer/non-dealer because of the unit's condition) ... 02
(Decided recycling unit was more important than selling it)..... 03
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QB8C:

B8c. If you had sold this refrigerator to a private party (e.g. not a dealer), how much money do you think you would have received for it?
(Don't know)..... 9998
(Refused) 9999

QB8D:

B8d. If an appliance dealer were to take it away, how much, if anything, do you think you would have to pay for this service?
(Nothing/free service)..... 0000
(Don't know) 9998
(Refused) 9999

QB2G:

B2g. One factor in disposing of a refrigerator is being able to physically move and transport it. Do you have the ability to do this yourself, or would you need assistance such as renting or borrowing a truck or having someone other than your immediate family help you?
Yes, could do it myself..... 1
No, would need assistance..... 2
(Don't Know) 8
(Refused) 9

QB2:

B2. What was the condition of the refrigerator when you signed up for the ComEd program? Would you say...
It worked and was in good physical condition 1
It worked but needed minor repairs like a door seal or handle, or..... 2
It worked but had some problems..... 3
(It didn't work) 4
(Don't Know) 8
(Refused) 9

QB3:

B3. Thinking about the refrigerator that ComEd picked up, how much money do you think it would have cost each month to run it if it were running full-time?
Nothing..... 1
$1 to $5..... 2
$6 to $10..... 3
$11 to $15..... 4
$16 to $20..... 5
More than $20 6
(Don't Know) 8
(Refused) 9

TQB5:

There may have been a number of reasons why you chose to get rid of the refrigerator that we've been discussing. Using a 0 to 10 scale where 0 is "not at all important" and 10 is "extremely important", please tell me how important each reason was in your decision to get rid of it?
CONTINUE..... 1

QB5A:

B5a. Please rate the importance... The refrigerator was expensive to run

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QB5B:

B5b. Please rate the importance... The refrigerator was a spare that I did not use very much

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QB5C:

B5c. Please rate the importance... The refrigerator was old and I wanted something with more modern features

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QB5D:

B5d. Please rate the importance... I wanted a bigger refrigerator
0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QB6:

B6. Were there any other reasons you chose to get rid of the refrigerator? (INTERVIEWER NOTE: ACCEPT UP TO TWO)
Please enter your response in the box below 00
(No) 96
(Don't know) 98
(Refused) 99

QC0:

C0. According to our records, you had a freezer removed that was made by <FRZ_MAKE>. Is this correct?
Yes 01
No - please specify MANUFACTURER in the box below 00
(Don't Know) 98
(Refused) 99

QC1:

C1. How long had you been using this freezer? (If respondent is confused, reinforce that "how long had it been used WHEN YOU DECIDED TO GET RID OF IT") (RECORD IN YEARS)
(Less than one year) 00
(Don't know) 98
(Refused) 99

QC2:

C2. Thinking just about the past year, was the freezer plugged in and running...
All the time, ... 1
For special occasions only, ... 2
During certain months of the year only, or 3
Was it never plugged in and running? 4
(Don't Know) 8
(Refused) 9

QC3:

C3. If you add up the total time your freezer was plugged in and running during the last 12 months that you had it, about how many total months would that be? Your best estimate is okay. (GET NEAREST MONTH OR HALF MONTH)

(Less than 1 month) 0000
(Don't know) 9998
(Refused) 9999

QC4:

C4. Was the freezer running during the summer or was it mainly running during other times of the year?

Running during the summer 1
Mainly running other times of the year 2
(Don't Know) 8
(Refused) 9

QC5:

C5. Where would the freezer have been located if it had not been removed by ComEd? (IF NEEDED: We want to understand where the unit was located when you were using it before it was picked up)

(Kitchen) 01
(Garage) 02
(Porch/Patio) 03
(Basement) 04
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QC5B:

C5B. Was the space heated or not?

Yes 1
No 2
(Yes - Heated part of the year) 3
(Don't Know) 8
(Refused) 9

QC5C:

C5C. Was the space air-conditioned or not?

Yes 1
No 2
(Yes - Air conditioned part of the year) 3
(Don't Know) 8
(Refused) 9

QC6:

C6. How old was the freezer when ComEd removed it? (RECORD IN YEARS)

(Less than one year) 00
(Don't know) 98
(Refused) 99

QC7:

C7. Did you replace the freezer that ComEd picked up with another one? (NOTE: We are only interested in stand-alone freezers, not freezers that are part of your refrigerator)

Yes..... 1
No..... 2
(Don't Know) 8
(Refused) 9

QPI2:

PI2. Were you planning to replace your freezer before you decided to recycle your existing unit through ComEd's program?

Yes..... 1
No..... 2
(Don't know)..... 8
(Refused) 9

QPI2A:

PI2A. Just to confirm: you are saying that you WOULD have replaced your old freezer with or without ComEd's program, is that correct?

Correct, I would have replaced it either way. 1
Incorrect, I would not have replaced it without ComEd's program. 2
(Don't know)..... 8
(Refused) 9

QPI2B:

PI2B. Just to confirm: you are saying that you would NOT have bought a new freezer independent of ComEd's program, is that correct?

Correct, I would not have replaced it without ComEd's program..... 1
Incorrect, I would have replaced it either way..... 2
(Don't know)..... 8
(Refused) 9

QPI2C:

PI2C. What was it about ComEd's program that encouraged you to buy the replacement unit? Was it...

The $35 program incentive..... 01
The convenience of the home pick-up of the old unit, or 02
Something else (please specify) 00
(Nothing in ComEd's program encouraged me to buy a replacement unit)..... 96
(Don't know)..... 98
(Refused) 99

QC7A:

C7A. What is the name and location of the retailer that you purchased the replacement unit from?

(Please enter response in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QC8AA:

C8aa. Did you install the replacement freezer before or after the old freezer was picked up?

before..... 1
after..... 2
(Got it the same day) 3
(Don't Know) 8
(Refused) 9

QC8A:

C8a. How long <QC8AA> the old one was picked-up did you install the replacement freezer?

(Same day)..... 01
(Within one to two weeks) 02
(Within one month) 03
(Within two to three months)..... 04
(Within four to six months) 05
(Within six to twelve months/ one year)..... 06
(More than one year later) 07
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QC8B:

C8b. Was the replacement freezer brand new or used?

Brand new..... 1
Used..... 2
(Don't Know) 8
(Refused) 9

QC8C:

C8c. Was your replacement freezer...

A chest freezer or 01
An upright freezer..... 02
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QC8D:

C8d. Is the replacement freezer frost free or manual defrost?

Frost free 01
Manual defrost..... 02
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QC8E:

C8e. What size is this replacement freezer in cubic feet? (IF NEEDED: Your best estimate is fine. CLARIFY FRACTIONS TO GET TO NEAREST NUMBER.)

Less than 10 cubic feet 01
10 to 15 cubic feet 02
16 to 20 cubic feet 03
More than 20 cubic feet 04
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QC8E1:

C8e1. Is your replacement freezer larger, smaller or the same size as the one it replaced?

Larger 1
Smaller 2
Same Size 3
(Don't Know) 8
(Refused) 9

QC8F:

C8f. Was getting the replacement a major reason you decided to discard the old one?

Yes 1
No 2
(Don't Know) 8
(Refused) 9

QC8G:

C8g. How old is this replacement freezer?

(Less than one year) 00
(Don't know) 98
(Refused) 99

QTC9:

Now let's get back to your old freezer that was removed by ComEd.

CONTINUE 1

QC9:

C9. When you first heard about ComEd's Appliance Recycling Program, were you already considering getting rid of this freezer? This could have been by selling it, giving it away, having someone pick it up, or taking it to the dump or a recycling center.

Yes 1
No 2
(Don't Know) 8
(Refused) 9

QC10:

C10. If you had been unable to get rid of your freezer through the ComEd appliance recycling program, would you have still gotten rid of the freezer, or would you have kept it?

Gotten rid of it 1
Kept it 2
(Don't Know) 8
(Refused) 9

QC11B:

C11b. If the ComEd program hadn't been available, would you have gotten rid of the freezer within 6 months of when you did, within a year of when you did, or would it have taken longer than a year for you to get rid of this freezer?

Within 6 months 1
Within a year 2
Over a year 3
(Don't Know) 8
(Refused) 9

TQD1:

I am now going to read a list of alternative ways that you COULD have disposed of this freezer. For each, tell me if this is a method you had CONSIDERED using or doing.

CONTINUE..... 1

QD1_1:

D1_1. Did you consider...Selling it?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QD1_2:

D1_2. Did you consider... Giving it away for free?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QD1_3:

D1_3. Did you consider... Having it removed by the dealer you got your new or replacement freezer from?

Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QD1_4:

D1_4. Did you consider... Taking it to a dump or landfill, or a recycling center?
Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QD1_5:

D1_5. Did you consider... Hiring your garbage collector or someone else to haul it away?
Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QD1_6:

D1_ 6. Did you consider... Keeping it?
Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QD1A:

D1a. You said you considered selling your freezer. Did you consider selling the freezer to an appliance dealer, or to a private party (like a friend, relative or by running an ad)?
Dealer..... 1
Private party (friend, relative, or by running ad)..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QD1B:

D1b. You said you considered giving away your freezer. Did you consider giving it to a private party (like a friend, relative or by running an ad), or to a charitable organization? (IF NEEDED: examples of a charitable organization could be Goodwill Industries or a Church)
Private party (friend, relative or by running an ad)..... 1
Charitable organization..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QD1AB:

Have you ever heard of Craigslist.com? (IF NEEDED: Craigslist.com is a website that is used for buying, selling and giving away new and used items. It performs functions similar to classified ads in newspapers.)

Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QD1AC:

Have you ever used Craigslist to buy, sell or give away used furniture or appliances?

Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QD1AC1:

What did you use it for?

Please specify in the box below..... 00
(Don't know)..... 98
(Refused)..... 99

QD1AD:

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your freezer?

(Yes - would have sold on Craigslist.com)..... 01
(Yes - would have given away on Craiglist.com)..... 02
(No)..... 03
(Other: Record Verbatim)..... 00
(Don't know)..... 98
(Refused)..... 99

QD1AD1:

How much would you have sold it for? (NOTE: RECORD DOLLARS)

(Don't know)..... 9998
(Refused)..... 9999

QD1C:

D1c. You said you considered taking away the freezer. Did you consider taking it to a dump or landfill, or to a recycling center?

Dump or landfill..... 1
Recycling Center..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QD1D:

D1d. You said you considered keeping the freezer. Did you consider storing it unplugged, or using it as a spare?
Storing it unplugged 1
Using it as a spare 2
Both 3
(Don't Know) 8
(Refused) 9

QD7:

D7. Now suppose that ComEd appliance recycling program hadn't been available. Which one of these alternatives that we've just discussed would you have been MOST LIKELY to do, if the ComEd appliance recycling program had not been available?
Selling it to a private party 01
Sell it to an appliance dealer 02
Give it away to a private party 03
Give it away to a charity organization, such as Goodwill Industries or a church .. 04
Have it removed by the dealer you got your new or replacement refrigerator from05
Haul it to the dump or landfill 06
Haul it to the recycling center 07
Hired your garbage collector or someone else to haul it away 08
Keep it and store it unplugged 09
Keep it and use it as a spare 10
(Some other way, specify) 00
(Don't know) 98
(Refused) 99

QD4B:

D4B. You mentioned _$Recall(RECALL="you would have kept this freezer and used it as a spare",CONDITION="QD7=10")_$Recall(RECALL="you considered keeping this freezer and using it as a spare",CONDITION="QD1D=2,3 AND NOT QD7=10") if the ComEd appliance recycling program weren't available. For how many years would you have used this freezer as a spare? (IF NEEDED: Your best estimate is fine.)
(Until it broke, indefinitely) 77
(Less than one year) 00
(Don't know) 98
(Refused) 99

QD4C:

D4C. Where would this freezer have been located if you hadn't gotten rid of it and had used it as a spare? (CLARIFY: What room? IF NEEDED: Your best estimate is fine.)
(Kitchen) 01
(Garage) 02
(Porch) 03
(Basement) 04
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QD4D:

D4D. Would this have been a heated space?

Yes..... 1
No..... 2
(Part of the year)..... 3
(Don't Know)..... 8
(Refused)..... 9

QD4E:

D4E. Would this have been an air-conditioned space?

Yes..... 1
No..... 2
(Part of the year)..... 3
(Don't Know)..... 8
(Refused)..... 9

QD8:

D8. You mentioned that you considered selling your freezer to _$Recall(RECALL="an appliance dealer",CONDITION="QD1A=1")_$Recall(RECALL="a private party",CONDITION="QD1A=2") _$Recall(RECALL="an appliance dealer or private party",CONDITION="QD1A=3"). Did you actually attempt to sell your freezer in this way before participating in the program?

Yes..... 1
No..... 2
(Don't Know)..... 8
(Refused)..... 9

QD8A:

D8a. Did you attempt to trade in or sell the freezer to an appliance dealer, or to a private party? (IF NEEDED: Private party could be a friend, family member, neighbor or someone you find through running an ad)

To a dealer..... 1
To a private party..... 2
Both..... 3
(Don't Know)..... 8
(Refused)..... 9

QD8B:

D8b. Why did you not follow through with this transaction?

(Couldn't find an interested dealer/non-dealer at the price I wanted)..... 01
(Couldn't find an interested dealer/non-dealer because of the unit's condition)... 02
(Decided recycling unit was more important than selling it)..... 03
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused)..... 99

QD8C:

D8c. If you had sold this freezer to a private party (e.g. not a dealer), how much money do you think you would have received for it? (NOTE: RECORD DOLLARS)
(Don't know)..... 9998
(Refused) 9999

QD8D:

D8d. If an appliance dealer were to take it away, how much, if anything, do you think you would have to pay for this service? (NOTE: RECORD DOLLARS)
(Nothing/free service)..... 0000
(Don't know)..... 9998
(Refused) 9999

QD2G:

D2g. One factor in disposing of a freezer is being able to physically move and transport it. Do you have the ability to do this yourself, or would you need assistance such as renting or borrowing a truck or having someone other than your immediate family help you?
Yes, could do it myself..... 1
No, would need assistance..... 2
(Don't Know) 8
(Refused) 9

QD2:

D2. What was the condition of the freezer when you signed up for the ComEd program? Would you say...
It worked and was in good physical condition 1
It worked but needed minor repairs like a door seal or handle, or..... 2
It worked but had some problems..... 3
(It didn't work) 4
(Don't Know) 8
(Refused) 9

QD3:

D3. Thinking about the freezer that ComEd picked up, how much money do you think it would have cost each month to run it if it were running full-time?
Nothing..... 1
$1 to $5..... 2
$6 to $10..... 3
$11 to $15..... 4
$16 to $20..... 5
More than $20 6
(Don't Know) 8
(Refused) 9

TQD5:

There may have been a number of reasons why you chose to get rid of the freezer that we've been discussing. Using a 0 to 10 scale where 0 is "not at all important" and 10 is "extremely important", please tell me how important each reason was in your decision to get rid of it?

CONTINUE..... 1

QD5A:

D5a. Please rate the importance... The freezer was expensive to run

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important..... 10
(Not applicable) 96
(Don't know)..... 98
(Refused) 99

QD5B:

D5b. Please rate the importance... I did not use the freezer very much

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important..... 10
(Not applicable) 96
(Don't know)..... 98
(Refused) 99

QD5C:

D5c. Please rate the importance... The freezer was old and I wanted something with more modern features

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QD5D:

D5d. Please rate the importance... I wanted a bigger freezer

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Not applicable) 96
(Don't know) 98
(Refused) 99

QD6:

D6. Were there any other reasons you chose to get rid of the freezer?
Please enter your response in the box below 00
(No) 96
(Don't know) 98
(Refused) 99

QE0:

E0. According to our records, you also had a room air conditioner removed by ComEd.
Is this correct?

Yes 1
No 2
(Don't Know) 8
(Refused) 9

QE00:

E00. Was this your own AC or were you discarding someone else's unit?
My own unit 01
Someone else's unit 02
(Something else - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QE1:

E1. At the time the room air conditioner was picked up, was it your only AC, or did you have additional AC units?
Only AC 1
Had additional ACs 2
(Don't Know) 8
(Refused) 9

QE2:

E2. Thinking just about the most recent summer that you still had this AC, was it plugged in and running?
Yes 1
No 2
(Don't Know) 8
(Refused) 9

QE3:

E3. Still thinking about this last summer that you had the room AC unit, did you run it most days regardless of the temperature or only on days when the temperature reached a certain level?
Most days 1
Only when temperature reached a certain level 2
(Don't Know) 8
(Refused) 9

QE3A:

E3a. How hot did it have to get inside your home or condominium before you ran the room AC unit?
Less than 70 degrees 01
70 to 75 degrees 02
76 to 80 degrees 03
81 to 85 degrees 04
Above 85 degrees 05
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QE4:

E4. When you were cooling your home or condominium, did you tend to run the room AC unit all day long, or only when you were home or using that room?

All the time 1
Only when home/using the room 2
(Don't Know) 8
(Refused) 9

QE5:

E5. In what room was the room AC unit located?

(Bedroom) 1
(Living room) 2
(Dining room) 3
(Kitchen) 4
(Hallway) 5
(Other) 6
(Don't know) 8
(Refused) 9

QE6:

E6. At the time of the pick-up, how old was the room air conditioner?

(Less than one year) 00
(Don't know) 98
(Refused) 99

QE7:

E7. Did you replace the AC unit ComEd picked up with a different one? (IF NEEDED: This could have been a different type of AC unit, such as a central AC unit.)

Yes 1
No 2
(Don't Know) 8
(Refused) 9

QE8AA:

E8aa. Did you install the replacement AC before or after the old AC unit was picked up?

before 1
after 2
(Got it the same day) 3
(Don't know) 8
(Refused) 9

QE8:

E8. How long <QE8AA> the old one was picked-up did you install the replacement AC? (DO NOT READ)

(Same day)..... 01
(Within one to two weeks) 02
(Within one month) 03
(Within two to three months)..... 04
(Within four to six months) 05
(Within six to twelve months/one year)..... 06
(More than one year later) 07
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QE8A:

E8A. Was the replacement another room air conditioner or a central AC system?

Room air conditioner..... 1
Central AC..... 2
(Don't Know) 8
(Refused) 9

QE8B:

E8B. Was the replacement AC brand new or used?

Brand new..... 1
Used..... 2
(Don't Know) 8
(Refused) 9

QE8C:

E8C. How old is the replacement air conditioner?

(Less than one year)..... 00
(Don't know)..... 98
(Refused) 99

QE8D:

E8D. Is your replacement AC larger, smaller or the same size as the one it replaced?

Larger 1
Smaller 2
Same size..... 3
(Don't Know) 8
(Refused) 9

QE8E:

E8E. Is it energy-efficient?

Yes..... 1
No..... 2
(Don't Know) 8
(Refused) 9

QE9:

E9. Can you provide me any more information about the replacement AC unit, such as the brand name and model number, size in tons, or any other characteristics?
(Yes - please record information in the box below) 00
No 96
(Don't Know) 98
(Refused) 99

TQE10:

Now let's get back to the room air conditioner that you had disposed of.
CONTINUE..... 1

QE10:

E10. When you first heard that ComEd would pick up an AC along with your other appliance, were you already considering getting rid of this room air conditioner? This could have been by selling it, giving it away, having someone pick it up, or taking it to the dump or a recycling center.
Yes..... 1
No 2
(Don't Know) 8
(Refused) 9

QE11A:

E11A. If you had been unable to get rid of your AC through the ComEd appliance recycling program, would you have still gotten rid of the AC, or would you have kept it?
Gotten rid of it 1
Kept it..... 2
(Don't Know) 8
(Refused) 9

QE11B:

E11b. If the ComEd program hadn't been available, would you have gotten rid of the AC within 6 months of when you did, within a year of when you did, or would it have taken longer than a year for you to get rid of this AC?
Within 6 months 1
Within a year 2
Over a year 3
(Don't Know) 8
(Refused) 9

QF1:

F1. Now suppose that ComEd appliance recycling program hadn't been available. I am going to read a list of alternative ways that you could have disposed of this AC. Please tell me which one you would have been most likely to use to get rid of this AC. Would you have...

Sold it 01
Given it away for free 02
Taken it to a dump or landfill, or a recycling center 03
Hired someone to take it to a dump or landfill, or a recycling center 04
(Keep it) 05
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

QF1A:

F1a. Would you have sold the AC to a used appliance dealer or to a private party, either someone you know or by running an ad?

Sold it to a used appliance dealer 1
Sold it to a private party 2
(Don't Know) 8
(Refused) 9

QF1B:

F1b. Would you have given the AC to someone you know or to a charity organization?

Given refrigerator to someone you know 1
Given to a charity organization 2
(Don't Know) 8
(Refused) 9

QF1C:

F1c. _$Recall(RECALL=" Would you have taken the AC to a dump or to a recycling center?",CONDITION="QF1=03")_$Recall(RECALL="Would you have had the AC taken to a dump or to a recycling center?",CONDITION="QF1=04")

Dump 1
Recycling Center 2
(Don't Know) 8
(Refused) 9

QF1AB:

Have you ever heard of Craigslist.com? (IF NEEDED: Craigslist.com is a website that is used for buying, selling and giving away new and used items. It performs functions similar to classified ads in newspapers.)

Yes 1
No 2
(Don't know) 8
(Refused) 9

QF1AC:

Have you ever used Craigslist to buy, sell or give away used furniture or appliances?
Yes..... 1
No..... 2
(Don't know)..... 8
(Refused)..... 9

QF1AC1:

What did you use it for?
Please specify in the box below..... 00
(Don't know)..... 98
(Refused)..... 99

QF1AD:

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your room air conditioner?
(Yes - would have sold on Craigslist.com)..... 01
(Yes - would have given away on Craiglist.com)..... 02
(No)..... 03
(Other: Record Verbatim)..... 00
(Don't know)..... 98
(Refused)..... 99

QF1AD1:

How much would you have sold it for?
(Don't know)..... 9998
(Refused)..... 9999

QF3A:

F3A. You mentioned you would have kept this air conditioner if the ComEd appliance recycling program weren't available. If you had kept the AC, would you have used this AC or would you have stored it and not used it?
Used it..... 1
Stored it and not used it..... 2
(Both-store it and use it)..... 3
(Would not have kept it)..... 4
(Don't Know)..... 8
(Refused)..... 9

QF3B:

F3B. For how many years would you have used this AC? (IF NEEDED: Your best estimate is fine.)
(Until it broke, indefinitely)..... 77
(Less than 1 year)..... 00
(Don't know)..... 98
(Refused)..... 99

QF3C:

F3C. Where would this AC have been located if you hadn't gotten rid of it and had used it? (IF NEEDED, CLARIFY: What room?.)

(Bedroom) 1
(Living room) 2
(Dining room) 3
(Kitchen) 4
(Hallway) 5
(Other) 6
(Don't know) 8
(Refused) 9

QF2:

F2. What was the condition of the AC when you signed up for the ComEd program? Would you say ...

It worked and was in good physical condition 1
It worked but needed minor repairs 2
It worked but had some problems 3
(It wasn't working) 4
(Don't Know) 8
(Refused) 9

TQF4:

There may have been a number of reasons why you chose to get rid of the air conditioner that we've been discussing. Using a 0 to 10 scale where 0 is "not at all important" and 10 is "extremely important", please tell me how important each reason was in your decision to get rid of it?

CONTINUE 1

QF4A:

F4a. Please rate the importance... The AC was expensive to run

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Don't know) 98
(Refused) 99

QF4B:

F4b. Please rate the importance... The AC was a spare that I did not use very much

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Don't know) 98
(Refused) 99

QF4C:

F4c. Please rate the importance... The AC was old and wasn't cooling the best anymore

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Don't know) 98
(Refused) 99

QF4D:

F4d. Please rate the importance... I wanted a bigger AC unit or system

0 - Not at all important 00
1 01
2 02
3 03
4 04
5 05
6 06
7 07
8 08
9 09
10 - Extremely important 10
(Don't know) 98
(Refused) 99

QF5:

F5. Were there any other reasons you chose to get rid of the AC?
Please enter your response in the box below 00
(No) 96
(Don't know)..... 98
(Refused) 99

TQH1:

I have just a few questions left for background purposes only.
CONTINUE..... 1

QH1:

H1. Do you own or rent your home?
Own 1
Rent 2
(Don't Know) 8
(Refused) 9

QH1A:

H1a. Do you own rental property that is leased to others?
(Yes, lease to others) 01
(No, don't lease to others) 02
(Other - please specify in the box below)..... 00
(Don't know)..... 98
(Refused) 99

QH2:

H2. Do you pay your own electric bill or is it included in your rent?
Pay bill..... 1
Included in Rent 2
(Don't Know) 8
(Refused) 9

QH3:

H3. How many people live in your household year-round?
(Don't know)..... 98
(Refused) 99

QH4:

H4. What is the age of the Head-of-the Household? (IF THE ROLE IS SHARED, PLEASE ASK THEM TO PROVIDE AN AVERAGE)
(Don't know)..... 98
(Refused) 99

QH5:

H5. What is the approximate square footage of the home that you live in?
(Don't know)..... 99998
(Refused) 99999

QH5A:

H5a. Is it...
Less than 500 square feet 01
500 to less than 1000 square feet..... 02
1000 to less than 1500 square feet..... 03
1500 to less than 2000 square feet..... 04
2000 to less than 2500 square feet..... 05
2500 to less than 3000 square feet..... 06
3000 to less than 4000 square feet..... 07
4000 to less than 5000 square feet..... 08
5000 square feet or more 09
(Don't know)..... 98
(Refused) 99

QH6:

H6. How long have you lived at your current residence? (RECORD YEARS/MONTHS GIVEN)
Please enter your response in the box below 00
(Don't know)..... 98
(Refused) 99

QH6A:

H6a. Was your total family income in 2012 before taxes UNDER OR OVER $50,000?
Under $50,000 1
Over $50,000 2
(Exactly $50,000) 3
(Don't Know) 8
(Refused) 9

QH6B:

H6b. Was it under $15,000, between $15,000 and $30,000 or between $30,000 and $50,000? (INTERVIEWER NOTE: IF EXACTLY $30,000 ENTER AS '3. $30,000-$50,000')
Under $15,000 1
$15,000-$30,000..... 2
$30,000-$50,000..... 3
(Don't Know) 8
(Refused) 9

QH6C:

H6c. Was it between $50,000 and $75,000 or between $75,000 and $100,000 or was it over $100,000? (INTERVIEWER NOTE: IF EXACTLY $75,000 ENTER AS '2. $75,000-$100,000'. IF EXACTLY $100,000 ENTER AS '3. OVER $100,000')

$50,000-$75,000 1
$75,000-$100,000 2
Over $100,000 3
(Don't Know) 8
(Refused) 9

QH7:

H7. What is the highest level of education you have completed?

Less than high school 01
High school graduate or equivalent (e.g., GED) 02
Attended some college (includes junior/community college) 03
Bachelor's degree 04
Advanced degree 05
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

INT99:

Those are all the questions I have. Thank you very much for your time and help with this study!

Complete 10

NOTES:

QUESTION SPECIFIC NOTES - Notes linked to a specific question (F5)

35: QS1

S1. Our records show that you had <READ_QS1> picked up by ComEd's subcontractor JACO. Is this correct?

Yes, correct 01
No - please specify in the box below 00
(Don't Know) 98
(Refused) 99

40: QA0

A0. According to our records, you had a refrigerator removed that was made by <REF_MAKE>. Is this correct?

Yes 01
Freezer 02
Kenmore 03
(Other) 97
(Don't Know) 98
(Refused) 99

48: **QA5**

A5. Where would the refrigerator have been located if it had not been removed by ComEd? (IF NEEDED: If the refrigerator was your primary unit, we're interested in whether you would have left it in the kitchen or moved it to another room)

(Kitchen)..... 01
(Garage)..... 02
(Porch/Patio)..... 03
(Basement)..... 04
Laundry room..... 05
Utility area / shed..... 06
Would not have kept it..... 96
(Other)..... 97
(Don't know)..... 98
(Refused)..... 99

58: **QPI1C**

PI1C. What was it about ComEd's program that encouraged you to buy the replacement unit? Was it...

The $35 program incentive..... 01
The convenience of the home pick-up of the old unit, or..... 02
(Other)..... 97
(Nothing in ComEd's program encouraged me to buy a replacement unit)..... 96
(Don't know)..... 98
(Refused)..... 99

59: **QA7A**

A7A. What is the name and location of the retailer that you purchased the replacement unit from?

(Other)..... 97
(Don't know)..... 98
(Refused)..... 99

61: **QA8A**

A8a. How long <QA8AA> the old one was picked up did you install the replacement refrigerator?

(Same day)..... 01
(Within one to two weeks)..... 02
(Within one month)..... 03
(Within two to three months)..... 04
(Within four to six months)..... 05
(Within six to twelve months/one year)..... 06
(More than one year later)..... 07
(Other)..... 97
(Don't know)..... 98
(Refused)..... 99

63: **QA8C**

A8c. Does your replacement refrigerator have...
A single door, with a freezer compartment inside, ... 01
Two doors, side by side 02
A top freezer 03
A bottom freezer? 04
Two doors with bottom freezer 05
(No freezer) 96
(Other) 97
(Don't know) 98
(Refused) 99

64: **QA8D**

A8d. Is the replacement refrigerator frost free or manual defrost?
Frost free 01
Manual defrost 02
(Other) 97
(Don't know) 98
(Refused) 99

65: **QA8E**

A8e. What size is this replacement refrigerator in cubic feet? (IF NEEDED: Your best estimate is fine. CLARIFY FRACTIONS TO GET TO NEAREST NUMBER).
Less than 16 cu. ft. 01
16 - 19 cu. ft. 02
20 - 22 cu. ft. 03
23 - 25 cu. ft. 04
Greater than 25 cu. ft. 05
(Don't know) 98
(Refused) 99

84: **QB1AC1**

What did you use it for?
To buy an appliance/electronic 01
To sell an appliance/electronic 02
To both buy and sell electronics/appliances 03
(Other) 97
(Don't know) 98
(Refused) 99

85: **QB1AD**

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your refrigerator?
(Yes - would have sold on Craigslist.com) 01
(Yes - would have given away on Craiglist.com) 02
(No) 03
Possibly either sold it or given it away 04
(Other) 97
(Don't know) 98
(Refused) 99

100: **QB7**

B7. Now suppose that ComEd appliance recycling program hadn't been available. Which one of these alternatives that we've just discussed would you have been MOST LIKELY to do, if the ComEd appliance recycling program had not been available?

Selling it to a private party 01
Sell it to an appliance dealer 02
Give it away to a private party 03
Give it away to a charity organization, such as Goodwill Industries or a church .. 04
Have it removed by the dealer you got your new or replacement refrigerator from05
Haul it to the dump or landfill 06
Haul it to the recycling center 07
Hired your garbage collector or someone else to haul it away 08
Keep it and store it unplugged 09
Keep it and use it as a spare 10
Leave on curb for garbage/with "free sign" 11
(Other) 97
(Don't know) 98
(Refused) 99

102: **QB4C**

B4C. Where would this refrigerator have been located if you hadn't gotten rid of it and had used it as a spare? (CLARIFY: What room? IF NEEDED: Your best estimate is fine.)

(Kitchen) 01
(Garage) 02
(Porch) 03
(Basement) 04
Shed 05
Laundry Room 06
(Other) 97
(Don't know) 98
(Refused) 99

107: **QB8B**

B8b. Why did you not follow through with this transaction?

(Couldn't find an interested dealer/non-dealer at the price I wanted) 01
(Couldn't find an interested dealer/non-dealer because of the unit's condition) ... 02
(Decided recycling unit was more important than selling it) 03
Learned about program 04
(Other) 97
(Don't know) 98
(Refused) 99

119: **QB6**

B6. Were there any other reasons you chose to get rid of the refrigerator?

Cost **01**
Didn't use it much / spare **02**
Wanted more modern features/ better design **03**
Wanted bigger **04**
Wanted smaller **05**
Wanted better efficiency **06**
Wasn't working well / broken **07**
Incentive/recycling program **08**
Age **09**
Household remodel or relocating **10**
Was given a nicer one (used) **11**
Wanted to give it to someone/donate it **12**
Aesthetic reason (color, matching other appliances, etc.) **13**
Wanted a new one (general) **14**
(Other) **97**
(No) 96
(Don't know) 98
(Refused) 99

120: **QC0**

C0. According to our records, you had a freezer removed that was made by <FRZ_MAKE>. Is this correct?

Yes 01
Kenmore **02**
(Other) **97**
(Don't Know) 98
(Refused) 99

127: **QC5**

C5. Where would the freezer have been located if it had not been removed by ComEd? (IF NEEDED: We want to understand where the unit was located when you were using it before it was picked up)

(Kitchen) 01
(Garage) 02
(Porch/Patio) 03
(Basement) 04
Laundry room **05**
Utility area / shed **06**
(Other) **97**
(Don't know) 98
(Refused) 99

137: **QPI2C**

PI2C. What was it about ComEd's program that encouraged you to buy the replacement unit? Was it...

The $35 program incentive 01
The convenience of the home pick-up of the old unit, or 02
(Other) 97
(Nothing in ComEd's program encouraged me to buy a replacement unit) 96
(Don't know) 98
(Refused) 99

138: **QC7A**

C7A. What is the name and location of the retailer that you purchased the replacement unit from?

(Other) 97
(Don't know) 98
(Refused) 99

140: **QC8A**

C8a. How long <QC8AA> the old one was picked-up did you install the replacement freezer?

(Same day) 01
(Within one to two weeks) 02
(Within one month) 03
(Within two to three months) 04
(Within four to six months) 05
(Within six to twelve months/ one year) 06
(More than one year later) 07
(Other) 97
(Don't know) 98
(Refused) 99

142: **QC8C**

C8c. Was your replacement freezer...

A chest freezer or 01
An upright freezer 02
(Other) 97
(Don't know) 98
(Refused) 99

143: **QC8D**

C8d. Is the replacement freezer frost free or manual defrost?

Frost free 01
Manual defrost 02
(Other) 97
(Don't know) 98
(Refused) 99

144: **QC8E**

C8e. What size is this replacement freezer in cubic feet? (IF NEEDED: Your best estimate is fine. CLARIFY FRACTIONS TO GET TO NEAREST NUMBER.)

Less than 10 cubic feet 01
10 to 15 cubic feet 02
16 to 20 cubic feet 03
More than 20 cubic feet 04
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

163: **QD1AC1**

What did you use it for?

To buy an appliance/electronic 01
To sell an appliance/electronic 02
To both buy and sell electronics/appliances 03
(Other) 97
(Don't know) 98
(Refused) 99

164: **QD1AD**

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your freezer?

(Yes - would have sold on Craigslist.com) 01
(Yes - would have given away on Craiglist.com) 02
(No) 03
Possibly either sold it or given it away 04
(Other) 97
(Don't know) 98
(Refused) 99

179: **QD7**

D7. Now suppose that ComEd appliance recycling program hadn't been available. Which one of these alternatives that we've just discussed would you have been MOST LIKELY to do, if the ComEd appliance recycling program had not been available?

Selling it to a private party 01
Sell it to an appliance dealer 02
Give it away to a private party 03
Give it away to a charity organization, such as Goodwill Industries or a church .. 04
Have it removed by the dealer you got your new or replacement refrigerator from05
Haul it to the dump or landfill 06
Haul it to the recycling center 07
Hired your garbage collector or someone else to haul it away 08
Keep it and store it unplugged 09
Keep it and use it as a spare 10
Leave on curb for garbage/with "free sign" 11
(Other) 97
(Don't know) 98
(Refused) 99

181: **QD4C**

D4C. Where would this freezer have been located if you hadn't gotten rid of it and had used it as a spare? (CLARIFY: What room? IF NEEDED: Your best estimate is fine.)

(Kitchen)..... 01
(Garage)..... 02
(Porch)..... 03
(Basement)..... 04
Laundry room..... 05
Utility room..... 06
(Other)..... 97
(Don't know)..... 98
(Refused)..... 99

186: **QD8B**

D8b. Why did you not follow through with this transaction?

(Couldn't find an interested dealer/non-dealer at the price I wanted)..... 01
(Couldn't find an interested dealer/non-dealer because of the unit's condition)... 02
(Decided recycling unit was more important than selling it)..... 03
Would have taken too long/been difficult..... 04
Learned about program..... 05
(Other)..... 97
(Don't know)..... 98
(Refused)..... 99

198: **QD6**

D6. Were there any other reasons you chose to get rid of the freezer?

Cost..... 01
Didn't use it much / spare..... 02
Wanted more modern features/ better design..... 03
Wanted bigger..... 04
Wanted smaller..... 05
Wanted better efficiency..... 06
Wasn't working well / functionality..... 07
Incentive/recycling program..... 08
Age..... 09
Household remodel or relocating..... 10
Was given a nicer one (used)..... 11
Wanted to give it to someone / donate it..... 12
Taking up too much space..... 13
Aesthetic reason (color, matching other appliances, etc.)..... 14
Wanted a new one (general)..... 16
(Other)..... 97
(No)..... 96
(Don't know)..... 98
(Refused)..... 99

202: **QE00**

E00. Was this your own AC or were you discarding someone else's unit?
My own unit 01
Someone else's unit 02
(Other) 97
(Don't know) 98
(Refused) 99

206: **QE3A**

E3a. How hot did it have to get inside your home or condominium before you ran the room AC unit?
Less than 70 degrees 01
70 to 75 degrees 02
76 to 80 degrees 03
81 to 85 degrees 04
Above 85 degrees 05
(Other) 97
(Don't know) 98
(Refused) 99

212: **QE8**

E8. How long <QE8AA> the old one was picked-up did you install the replacement AC? (DO NOT READ)
(Same day) 01
(Within one to two weeks) 02
(Within one month) 03
(Within two to three months) 04
(Within four to six months) 05
(Within six to twelve months/one year) 06
(More than one year later) 07
(Don't know) 98
(Refused) 99

218: **QE9**

E9. Can you provide me any more information about the replacement AC unit, such as the brand name and model number, size in tons, or any other characteristics?
(Yes - please record information in the box below) 00
No 96
(Don't Know) 98
(Refused) 99

223: **QF1**

F1. Now suppose that ComEd appliance recycling program hadn't been available. I am going to read a list of alternative ways that you could have disposed of this AC. Please tell me which one you would have been most likely to use to get rid of this AC. Would you have...

Sold it 01
Given it away for free 02
Taken it to a dump or landfill, or a recycling center 03
Hired someone to take it to a dump or landfill, or a recycling center 04
(Keep it) 05
Leave on curb for garbage/with "free sign" 06
(Other) 97
(Don't know) 98
(Refused) 99

229: **QF1AC1**

What did you use it for?

(Other) 97
(Don't know) 98
(Refused) 99

230: **QF1AD**

If the ComEd program hadn't been available, would you have used Craiglist.com to sell or give away your room air conditioner?

(Yes - would have sold on Craigslist.com) 01
(Yes - would have given away on Craiglist.com) 02
(No) 03
(Other) 97
(Don't know) 98
(Refused) 99

241: **QF5**

F5. Were there any other reasons you chose to get rid of the AC?

Cost 01
Didn't use it much / spare 02
Wasn't working well / functionality / noise 03
Installed central air 04
Size / didn't fit in window 05
Taking up storage space 06
Because of the ComEd program 07
Because it was inefficient 08
(Other) 97
(No) 96
(Don't know) 98
(Refused) 99

248: **QH1A**

H1a. Do you own rental property that is leased to others?
(Yes, lease to others) 01
(No, don't lease to others) 02
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

254: **QH6**

H6. How long have you lived at your current residence? (RECORD YEARS/MONTHS GIVEN)
Please enter your response in the box below 00
(Don't know) 98
(Refused) 99

258: **QH7**

H7. What is the highest level of education you have completed?
Less than high school 01
High school graduate or equivalent (e.g., GED) 02
Attended some college (includes junior/community college) 03
Bachelor's degree 04
Advanced degree 05
(Other - please specify in the box below) 00
(Don't know) 98
(Refused) 99

7.4 Retailer Survey Instrument

Retailer Interview Guide – Final - 083013
[For Retailers Associated with Unit replacements]

Hello, my name is _____. I am calling from Itron on behalf of Commonwealth Edison, also known as ComEd. We are interested in speaking with retailers who recently sold new or used refrigerators and freezers to ComEd customers, who then disposed of their old unit through ComEd's Fridge Freezer Recycling Rewards program.

This study is being done as part of an annual evaluation of ComEd's Fridge Freezer Recycling Rewards Program. Do you have 10 minutes to speak with me about your company's practices for removing and disposing of used refrigerators and freezers after a customer buys a new/used unit from you?

CURRENT PRACTICES

1. Do you offer any kind of refrigerator/freezer removal or recycling option when customers purchase new appliances?
   RECORD ANSWER HERE:

[IF YES]

2. Is this only in conjunction with a new unit purchase?
   RECORD ANSWER HERE:
3. For how long have you been offering this service?
   RECORD ANSWER HERE:
4. Do you charge for this service or is it offered for free to customers?
   RECORD ANSWER HERE:
   Has there been any change in this pricing policy since the beginning of 2012?
   RECORD ANSWER HERE:
5. Are all types and sizes of refrigerators/freezers eligible?
   RECORD ANSWER HERE:
6. Could you describe how your removal program works? By this, I mean the steps involved in the actual pick up and removal. [DO NOT READ: we are looking for answers like: the unit is picked up from their home and turned over to a 3rd party hauler who then decides the next step.]
   RECORD ANSWER HERE:

7. Do you use another firm to do some or all the pick-ups or does your company do them all? (If another firm is involved, get name/contact information).
   RECORD ANSWER HERE:
   Has there been any change in this approach since the beginning of 2012?
   RECORD ANSWER HERE:
8. Do you know what happens to the units after they are picked up from your customers? What happens next? {DO NOT READ: we are looking for answers like: they are recycled, deconstructed, taken to a landfill, and/or resold to a used appliance dealer}
   RECORD ANSWER HERE:
   a. What criteria are used to decide how the units are handled?
      RECORD ANSWER HERE:
   b. How do the unit's age, style characteristics, and/or working condition enter into that decision? i.e., what if the unit is still fairly new and in good working condition versus an older unit and/or one that is not functioning properly? Are they handled differently?
      RECORD ANSWER HERE:
      Has there been any change in this approach since the beginning of 2012?
      RECORD ANSWER HERE:
9. [if another firm is used] Does your firm have contractual requirements that specify how the other firm is to dispose of the used appliances? What are those requirements?
   RECORD ANSWER HERE:
10. What percent of your customers that purchase a new appliance would you estimate use your appliance removal or disposal service?
    RECORD ANSWER HERE:

[IF STORE DOES NOT OFFER REMOVAL OR RECYCLING SERVICES]

11. Does your store provide information to customers seeking appliance disposal services? [IF YES] What types of information do you provide to your customers?
    RECORD ANSWER HERE:

AWARENESS OF PROGRAM

12. Are you aware of ComEd's Fridge Freezer Recycling Rewards program?
    RECORD ANSWER HERE:

[IF YES]

13. How did you learn about ComEd's program?
    RECORD ANSWER HERE:

14. Do your customers ever ask you about the ComEd Fridge Freezer Recycling Rewards Program? Do they ask if you have a recycling program in general available? [IF YES] What percentage do?
    RECORD ANSWER HERE:
15. Were you contacted by JACO, ComEd's program implementer, at any point in the past to participate? If so, approximately when (month/year)?
    RECORD ANSWER HERE:
16. Why haven't you participated in the program?
    RECORD ANSWER HERE:
17. Are there any changes ComEd could make to the program that would make you more likely to participate? [IF YES] What changes do you recommend?
    RECORD ANSWER HERE:

18. Now I am going to ask you a hypothetical question:

    If ComEd's Fridge Freezer Recycling Rewards program was not available and your store was asked by customers to dispose of a larger number of unwanted refrigerators and freezers picked up in connection with the sale of a new unit, what would your company have done with those additional unwanted appliances? (Probe to determine if units would have been left with the customer, re-sold, or collected and deconstructed/crushed.)
    RECORD ANSWER HERE:

END OF SURVEY. That concludes the survey. On behalf of ComEd, thank you very much for your time today.