



## **Energy Efficiency / Demand Response Plan: Plan Year 4 (6/1/2011-5/31/2012)**

### **Evaluation Report: ComEd *Smart Ideas* Program ENERGY STAR Residential Clothes Washer Rebate Program**

**FINAL**

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## E. Executive Summary

### *E.1 Evaluation Objectives*

This report outlines the impact and process evaluations of the Clothes Washer Rebate Program (CWR). CWR provides rebates to purchasers of specific clothes washers in an effort to promote upgrading of high-efficiency clothes washers among residential customers of ComEd. The objectives of the evaluation are to: (1) quantify net energy and peak demand savings impacts from the program during Program Year 4 (PY4), (2) determine key process-related program strengths and weaknesses; and (3) provide recommendations to improve the program in the future. The program was implemented and managed by ComEd and APT through various retailers.

### *E.2 Evaluation Methods*

The Evaluation Team's primary data collection activities for the impact and process evaluations were through telephone surveys. Program participant surveys as well as interviews with participating retailers and the program administrator were undertaken. The participant survey was used to develop the net-to-gross ratio as well as support the process evaluation. The surveys with participating retailers and the program administrator were used to support the process evaluation.

To estimate gross energy savings, the Evaluation Team relied on data and the algorithm from the Illinois Technical Reference Manual (TRM)<sup>1</sup>. The Evaluation Team used the TRM's existing values for evaluating ex-post savings in this report since there were no ex-ante deemed per-unit savings values for efficient clothes washers in PY4 - those values are presented, below, in Table E-1.

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<sup>1</sup> Illinois Statewide Technical Reference Manual, September 14, 2012, pages 296-302 – The September 14, 2012 final version of the first State of Illinois Energy Efficiency Technical Reference Manual (TRM) (effective as of June 1, 2012) has been agreed to by Illinois Stakeholder Advisory Group (SAG) participants and is currently pending approval before the Illinois Commerce Commission in Docket No. 12-0528 as of the date of this report.

**Table E-1. Clothes Washer Savings by Efficiency Level<sup>2</sup>**

Efficiency Level	MEF †	MEF Savings <sup>3</sup> (kWh)
Baseline Efficiency <sup>4</sup>	1.64	0
Energy Star	2.07	130
CEE Tier 2 <sup>5</sup>	2.28	177
CEE Tier 3	2.71	248

Source: Illinois TRM

† MEF: Modified Energy Factor, this is a metric to rate efficiency of clothes washers. The units of the MEF are ft<sup>3</sup>/kWh/cycle.

This program has not been evaluated before and so according to the NTG Framework,<sup>6</sup> the Net-to-Gross (NTG) ratio is to be applied retroactively. The program falls under the following condition from the NTG Framework: “For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself — NTG ratios established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”

### **E.3 Key Impact Findings and Recommendations**

The ex-ante net energy savings were 1,366 MWh. The evaluation-verified net energy savings are 1,482 MWh; therefore, 108% of the program estimated savings were verified by the evaluation. This was calculated using the default gross per unit energy savings for clothes washers (outlined above in Table E-1 and, then, the net-to-gross (NTG) factor was applied to the total gross savings. The Evaluation Team calculated a net-to-gross savings value of 0.678, which includes a free ridership rate of 0.322. Table E-2 compares the ex-ante savings values to the evaluated savings.

<sup>2</sup> TRM at page 298; These savings are default for the efficiency level if water heating and drying are both 100% electric.

<sup>3</sup> MEF (Modified Energy Savings) calculates the amount of dryer energy required to remove remaining moisture from washed items in addition to the water heating energy and machine energy required by the washer. MEF units are expressed as ft<sup>3</sup>/kWh/cycle

<sup>4</sup> TRM - Average MEF of non-ENERGY STAR units from the California Energy Commission (CEC) database of Clothes Washer products.

<sup>5</sup> Consortium of Energy Efficiency (CEE) Tier levels are levels of higher efficiency clothes washers developed by the CEE. The tier levels are developed so that each are a certain percentage above set standards based on energy and water consumption.

<sup>6</sup> “Proposed Framework for Counting Net Savings in Illinois.” Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

**Table E-2. Ex-Ante and Evaluated Savings Comparisons (Gross and Net)**

	Total Number of Units	Gross Energy (MWh) Savings	Net Energy (MWh) Savings	Gross Demand (kW) Savings	Net Demand (kW) Savings
Ex-Ante PY4	21,463	2,484	1,366	N/A	N/A
Evaluated PY4	21,463	3,704	2,511	477	323
<b>Realization Rate</b>	-	<b>149%</b>	<b>N/A*</b>	<b>N/A</b>	<b>N/A</b>

Source: Utility tracking data and Evaluation Team Analysis.

\*Realization Rate is based only on Gross Savings Evaluations.

The Evaluation Team also evaluated the verification rate for this program and found it to be 1.00. This is based on 100% of phone survey respondents answering “yes” to the question asking if they recalled purchasing a new clothes washer through the program. Upon review of the tracking data base, the evaluation team found the tracking data to be complete and the data accurately reflects the program. However, review of the per unit savings data in the database was difficult to decipher in its current format and the evaluation team recommends reconfiguring the tracking data so that it can more easily be reviewed and tracked.

The following list summarizes the key impact findings and recommendations from the study:

#### **Savings Impacts:**

**Finding.** The PY4 goal was to sell 28,000 - 30,000 efficient clothes washers and achieve a net savings of 1,786 MWh. However, the ex-ante net energy savings was 1,366 MWh and the evaluation-verified net energy savings is higher at 2,511 MWh which resulted in an overall net realization rate of 1.84. The program has exceeded both the PY4 goal as well as the ex-ante energy savings.

**Recommendation.** ComEd should reevaluate their goals based on the evaluated per-unit savings outlined in the next finding. This will provide a more accurate estimate of goals.

#### **Default Per Unit Savings**

**Finding.** Through conversations with ComEd, it was determined that there were no default per-unit savings values established by ComEd for the Clothes Washers. The Evaluation Team has developed these default savings based on the calculations from the TRM and the default savings for different efficiency levels are laid out above in Table E-1. The Evaluation Team has also calculated a net-to-gross savings value of 0.678.

**Recommendation.** ComEd should use the above default savings values for program tracking and gross savings estimates. The evaluated NTG value of 0.678 should also be used for net savings estimates.

#### **Net Program Impact Analysis:**

**Finding.** The evaluated NTG ratio is 0.678 based on a Free-Ridership rate of 0.322.

**Recommendation.** The design intent of the Clothes Washer Rebate program was to entice low-end clothes washer purchasers to consider an alternative energy-efficient washer. This led to a 0.678 NTG ratio partially due to limiting other higher-end clothes washers (e.g., price and efficiency limitation). It is understood that this is part of the program design, however, if the program considered also targeting higher end clothes washers, the program could witness an improved NTG ratio.

#### **Spillover Analysis:**

**Finding.** The evaluation team found that the Clothes Washer Rebate program creates a spillover effect with participants purchasing additional energy efficient products. Twenty-eight percent of surveyed participants reported purchasing additional energy efficient products because of their experience with the Clothes Washer Rebate program. The exact number of energy efficiency products purchased by participants is not known – it should be clear that the additional purchases were not within the CWR program (e.g., not additional clothes washers, but additional energy efficiency products). Hence, it is difficult to accurately determine the exact spillover energy savings for this program due to varying per-unit savings of among different energy efficiency products. Additionally, it is likely that energy savings in other ComEd programs may already account for some of the spillover induced by this program. The final NTG ratio does not include an adjustment for spillover.

### ***E.4 Key Process Findings and Recommendations***

Customers and retail partners are satisfied with the program. The program is offering an appropriate rebate amount based on customer and retail store interviews. A very small percentage of customers wanted or suggested a higher rebate; retailers reported that the instant rebate was a key factor in customer participation.

The retailers suggested expanding the models eligible for the program as well as developing a system to identify commercial customers participating as a residential customer to get the rebate for their business. This has led to some retailers losing the rebate for some washers sold.

As both retailers and customers responded very favorably to the program overall, it is recommended to continue to operate the program in its current state in PY5 with the addition of the recommendations in this report. However, future programs that look at this program as an example should ensure that there are numerous eligible models and retailers should not be limited to further the goals of the program by too few eligible models. A system should also be worked out on how to deal with customers who are commercial customers, but purchase the appliance as a possible residential customer. When this happens, the retailer has that invoiced rebate rejected and they end up not benefiting from the sale of that clothes washer.



The following list summarizes the key process findings and recommendations from the study:

**Program Awareness Levels:**

**Finding.** About 17% of surveyed participant customers were unaware of the program or aware that they had received a rebate. Retailers are already required to inform all customers of the program and provide an instant rebate every time an eligible clothes washer is sold. Based on our interviews, the evaluation team believes that retailers are informing customers about the program; however, many of surveyed customers were unaware of the program and may have forgotten that they received a rebate.

**Recommendation.** Remind rebated customers six months to 1 year after participating in the program by sending a letter, providing a bill insert in participant monthly bills or sending an e-mail. This will remind the customers of their participation, increase awareness and is also an opportunity for ComEd to inform the customer of newer programs.

**Program Incentive Levels:**

**Finding.** The program appears to be in a very good position as the rebate amount and the ease of the instant rebate have left both the customers and the retailers satisfied. A very small percentage of customers wanted or suggested a higher rebate and retailers reported that the customers were much more interested and engaged in hearing/participating in the program due to the instant rebate.

**Recommendation.** Maintain the current rebate level and consider the instant rebate for all future rebate programs, as both the customers and retailers are extremely happy with it.

**Participant Satisfaction:**

**Finding.** Customers and retailer partners are highly satisfied with the program. Though the retailers were invited to recommend models for inclusion in the program, the retailers still suggested expanding the models eligible to the program to include more efficient clothes washers. In addition, retailers suggested developing a system to identify commercial customers participating as a residential customer to get the rebate for their business. This has led to some retailers losing the rebate for some washers sold.

**Recommendation.** Continue to operate the program as is since it will be ending at the end of PY5. However, future programs that look at this program as an example should make sure that the eligible models are as expansive as possible and do not limit the retailers. A system should also be worked out on how to deal with customers who are commercial customers but purchase the appliance as a seemingly residential customer. When this happens, the retailer has that invoiced rebate rejected and they end up not benefiting from those sales.

## 1. Introduction to the Program

### 1.1 Program Description

This report outlines the findings of the impact and process evaluations of the Clothes Washer Rebate Program (CWR). CWR provides rebates to purchasers of specific clothes washers in an effort to promote upgrading of high-efficiency clothes washers among residential customers of ComEd. The objectives of this PY4 Clothes Washer Rebate Program evaluation are to quantify net savings impacts from the program, and identify a few key ways to improve future similar programs (given that this program is likely to sunset in PY5). The objectives of the evaluation are to: (1) quantify net energy and peak demand savings impacts from the program during Program Year 4 (PY4), (2) determine key process-related program strengths and weaknesses; and (3) provide recommendations to improve the program in the future. The program was implemented and managed by ComEd and APT through the sale of clothes washers at various retailers.

This program offers an incentive for the purchase of the following high-efficiency clothes washers:

- 1) Top loading washers that have a minimum modified energy factor ("MEF") of 2.0, which is ENERGY STAR certified; and
- 2) Front loading washers that have a MEF of 2.0 which is ENERGY STAR certified.

Only ComEd residential customers can qualify for rebates and the rebate is only available at participating retail stores. These retail stores use customer address zip codes to qualify customers for rebates. Appliance sales staffs are trained to inquire whether the customer is also a customer of ComEd. Customers receive an instant rebate of seventy-five dollar (\$75) for any qualifying high-energy efficiency washing unit. The criteria to receive the rebate are as follows: (i) a qualifying washer model is identified at the retail point-of-sale by a ComEd sticker (and the sales associates at the retail outlet are to know the models that qualify), (ii) the washer is to be purchased and delivered during the ComEd program year which is June 1, 2011 through May 31, 2012; and (iii) the purchaser must be a ComEd Residential customer.

### 1.2 Evaluation Questions

The evaluation includes two areas of analysis: Impact Evaluation and Process Evaluation. The primary objective of the impact evaluation is to estimate gross and net energy and peak demand savings for the CWR program. These results will be used to validate program-claimed savings and to adjust estimates of savings to improve their accuracy. The primary objective of the process evaluation effort will be to help program designers and managers structure their programs to achieve cost-effective savings while also maintaining high levels of customer satisfaction.

The impact evaluation produced gross savings estimates for PY4 (2011-12)<sup>7</sup>. The impact evaluation includes evaluation activities that protect the validity and accuracy of gross savings estimates attributable to the CWR program. Evaluators:

- Verified program reported tracking data and savings assumptions for each measure using industry standard impact algorithm sources and conduct a verification review of a sample of selected projects; and
- Conducted follow-up telephone surveys with a sample of participants in PY4 to verify installation and retention of measures, and update claimed participation values. This telephone survey will support calculating the program net-to-gross ratio thus allowing calculation of net program savings.

The process evaluation findings help program designers and managers structure the program to achieve cost-effective savings while maintaining high levels of customer satisfaction. Process evaluation activities in PY4 included interviews with program staff at both ComEd and APT, as well as 3 participating retailers. Program staff and retailers were contacted with assistance from ComEd. Process evaluation data collection also included telephone surveys of customers and a review of contractor and utility data tracking systems.

The PY4 evaluation investigated the following key questions:

#### Impact Questions:

1. What is the level of gross annual energy (kWh) and peak demand (kW) savings induced by the program?
2. What are the net impacts from the program? What is the level of free ridership associated with this program and how can it be reduced?
3. Did the program meet its energy and demand goals? If not, why not?

#### Process Questions:

1. How aware are customers of the ComEd-sourced clothes washer rebates? How effective are the in-store displays and marketing materials?
2. What is the driving force behind a customer's decision to participate in the program? How satisfied is the customer with the program's rebate process?
3. What feedback do major retailers have regarding ComEd's Appliances Rebates program?
4. How can the program be improved?

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<sup>7</sup> Program year designations are as follows: PY4 begins June 1, 2011 and ends May 31, 2012; PY5 begins June 1, 2012 and ends May 31, 2013; PY6 begins June 1, 2013 and ends May 31, 2014.

## 2. Evaluation Methods

### 2.1 Primary Data Collection

Data collection activities completed included the following:

1. In-depth interviews with program managers and implementers:
  - a. Program administration/ComEd program staff
  - b. Three retailer partners
2. Telephone surveys using structured interviews and Computer Assisted Telephone Interviews (CATI) – randomly-selected samples of customer participants representing:
  - a. Single-family homes; and
  - b. Multi-family buildings
3. Verification of claimed savings:
  - a. Engineering review of tracking system, project documents, and savings algorithms and assumptions
  - b. Survey verification of a sample of installations in database
4. Marketing and outreach materials review

An overview of data collection activities is given in Table 2-1 below.

**Table 2-1. Data Collection Activities for PY4**

Data Collection Task	Sampling Frame	Quantity	Gross Impact	Net Impact	Process
Utility Staff and Implementation Contractor Interviews	Program Directory	1			X
Retailer Interviews	Roster of Participating Retailers	3			X
Engineering review of claimed savings/project documentation	Program Tracking Database	All	X		
Customer Participant Survey	Residential Rebate Program Database	140		X	X

The participant interview sampling plan's original goal was to interview 50 multi-family (MF) participants and 90 single-family (SF) participants. Upon executing the plan, it was found that the MF sample was smaller due to a lower number of MF participants in the CWR program. Statistically, the survey remained valid at 20 MF participants and 120 SF participants. Thus, this sample was drawn for the process and net-to-gross (NTG) evaluations.

### 2.2 Impact Evaluation Methods

The Evaluation Team's approach to measuring the clothes washer rebate program's impact was a multi-stage approach. This included a default savings review, a gross savings verification and net savings

verification. This evaluation approach was chosen since it provides the most comprehensive analysis in reviewing the program, which did not have deemed savings to use in this analysis.

### 2.2.1 Gross Impact Evaluation

The Evaluation Team performed a validation check of utility-reported *ex ante* gross savings in the program tracking database. The Evaluation Team's primary research in PY4 involved researching a per-unit savings calculation methodology for clothes washers, studying the program tracking database and evaluating the validity of reported and claimed program activity. The Evaluation Team also conducted customer interviews to calculate program level NTG. Specifically, the Evaluation Team researched the following:

- Pre-installation baseline conditions (*assumed to be federal standards*);
- As-installed operating conditions through secondary research; and
- Free-ridership

Gross kWh, kW and peak kW savings are calculated across all program clothes washers based on the following equations:

- $EC = (1 / MEF) \times (C) \times (S)$
- $kWh \text{ Savings} = EC_{BASE} - EC_{EFFICIENT}$
- $kW \text{ Savings} = (kWh \text{ Savings}) / (C)$
- $Peak \text{ kW Savings} = (kW \text{ Savings}) \times (C.F.)$

Where:

- EC: Energy consumed by a clothes washer in kWh
- MEF: Modified Energy Factor, this is a metric to rate efficiency of clothes washers. The units of the MEF are ft<sup>3</sup>/kWh/cycle<sup>8</sup>
- C: Number of clothes washer cycles per year.
- S: Size of the equipment in cubic feet.
- C.F.: Coincidence Factor

These savings algorithms are sourced from the Illinois TRM<sup>9</sup>. The numbers were cross-checked for validity with sources including the Pacific Northwest Regional Technical Forum (RTF) and Energy Star. The RTF calculation methodology has been reviewed and accepted by all utilities and interested third-parties in the Pacific Northwest region of the United States. The algorithm for savings was the same between these two sources; however, a few assumptions were different, including the baseline MEF and number of cycles per year. The Evaluation Team chose to use the Illinois TRM assumptions since the RTF made their assumptions based on Pacific Northwest surveys and databases and the Illinois TRM is tailored to Illinois data.

Program sales data was obtained from the ComEd tracking database. As the program only pays rebates to those customers living in the utility service territory, there was no need to conduct a leakage analysis.

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<sup>8</sup> 8 MEF (Modified Energy Savings) calculates the amount of dryer energy required to remove remaining moisture from washed items in addition to the water heating energy and machine energy required by the washer. MEF units are expressed as ft<sup>3</sup>/kWh/cycle

<sup>9</sup> Illinois TRM at pages 296-302,

### 2.2.2 Net-to-Gross (NTG) Methodology

Data collection interviews captured the information needed to answer the net impact and process research questions noted earlier. Estimating the net-to-gross ratio (NTGR) using the customer self-report method requires the calculation of free-ridership and participant spillover. Free-ridership refers to program purchases that would have taken place anyway in the absence of the program, and spillover refers to positive impacts of the program on sales of non-program energy efficient equipment. Once these two parameters have been estimated, the NTGR can be calculated as follows:

- $NTGR = 1 - FR + SO$

Where

- NTGR = Net to gross ratio
- FR = Free ridership
- SO = Participant Spillover
- Free ridership and spillover are evaluated based on data collected during customer phone interviews. The sample size meets a confidence and precision level of 90/10.

The following topics were investigated in the survey to determine free-ridership. They are organized according to the logic applied to determine if an individual was a free rider:

- Free rider if
  - Do not recall rebate (used only in the most conservative calculation)
  - Likely would have bought the same clothes washer within a year of actually purchasing the clothes washer without the rebate.
- Not a free rider if:
  - Influence of the retailer on purchase decision is high
  - Had not thought about purchasing clothes washer before hearing of the rebate
  - Low likelihood that customer would purchase the higher efficiency clothes washer without the rebate.
  - The rebate was a critical factor in the decision.
  - Asked to see only models that received ComEd rebates.
  - The most important reason for purchase decision was either the rebate or being reminded of the value of reducing energy usage.

The complete description of the free ridership questions and calculation is included in the appendices.

The following topics were investigated in the survey to determine spillover:

- **Influence:** How much did the clothes washer rebate program influence the purchase of other energy efficient equipment.
- **Additional Energy Efficient (EE) Equipment or Product Purchases:** What other efficient equipment or products was purchased if the program was influential.

The Evaluation Team conducted telephone surveys with approximately 20 multifamily and 120 single family participants.

### 3. Evaluation Results

#### 3.1 Impact Evaluation Results

##### 3.1.1 Verification and Due Diligence Procedure Review

Participant survey results indicate that the program tracking database correctly records the clothes washers with 100% of the respondents answering that they did purchase a new clothes washer. However, 17% of those respondents were unaware that they had received a rebate, which will be discussed further in the process evaluation of this report. Therefore, the number of units by tier-efficiency level is derived from ComEd's tracking data, and shown below in Table 3-1, are valid.

**Table 3-1. Number of Clothes Washers Sold in PY4 by Tier Level**

	CEE Tier 1	CEE Tier 2	CEE Tier 3	Total
Clothes Washers Sold in PY4	875	2,323	18,265	21,463

*Source: Evaluation Team EM&V analysis of program tracking data*

##### 3.1.2 Tracking System Review

The Evaluation Team performed independent verification checks on the program tracking database and examined it for signs of systematic input error, outliers, missing values, and potentially missing variables. This review revealed no issues and based upon this review, the Evaluation Team recommends that ComEd continue tracking the CWR program as it did in PY4 (with the addition of documentation on per-unit ex-ante estimates as discussed below).

##### 3.1.3 Gross Program Impact Parameter Estimates

The evaluation used program sales data from the ComEd tracking database. It included the tier level and capacity in cubic ft. for each washer purchased through the program. These were inputs to the per unit savings estimates. In the participant phone survey, 100% of the respondents answered "yes" to having purchasing a new clothes washer through the program so the verified installation rate is 100%. Some of the clothes washers were returned to the retailer and the savings for those clothes washers were subtracted from the total savings estimate.

Through conversations with ComEd, it was determined that the evaluation should develop its own per-unit savings values when examining the ComEd **program-level** PY4 ex-ante savings estimates. The Evaluation Team developed per-unit savings values based on the calculations from the TRM and used them in the ex-post gross calculations.

The evaluation team compared the Illinois TRM impact parameters with estimates developed by the Pacific Northwest Regional Technical Forum (RTF). The RTF estimates were reviewed and accepted by multiple utilities and third parties in the Pacific Northwest. The algorithm for savings used was the same

and input assumptions were similar. The evaluation team concluded that the algorithm and supporting data in the Illinois TRM<sup>10</sup> are appropriate for estimating the program's impacts.

Gross kWh, kW and peak kW savings are calculated using the following equations:

- $EC = \text{Energy Consumed in kWh} = (1 / MEF^{11}) \times (C) \times (S)$
- $kWh \text{ Savings} = EC_{BASE} - EC_{EFFICIENT}^{12}$
- $kW \text{ Savings} = (kWh \text{ Savings}) / (C)$
- $\text{Peak kW Savings} = (kW \text{ Savings}) \times (C.F)$

Table 3-2 defines the input values for the above equations.

**Table 3-2. Clothes Washer Algorithm Input Values**

Parameter	Value	Source
MEF: Modified Energy Factor, this is a metric to rate efficiency of clothes washers. The units of the MEF are ft <sup>3</sup> /kWh/cycle	TRM prescribed values based on efficiency level found in database shown in the next table.	TRM
C: Number of clothes washer cycles per year.	295	TRM <sup>13</sup>
S: Size of the equipment in cubic feet.	Database value. If capacity is unknown assume 3.5 cubic feet	Tracking database or TRM
C.F: Coincidence Factor	0.038	TRM <sup>14</sup>

Source: Illinois TRM

The MEF efficiency values and energy savings for different efficiency levels are set forth in Table 3-3. The evaluation team recommends that ComEd use these values in future program tracking to produce consistent and reliable savings estimates.

<sup>10</sup> Illinois Statewide Technical Reference Manual, August 6, 2012, pages 302-308,

<sup>11</sup> MEF (Modified Energy Savings) calculates the amount of dryer energy required to remove remaining moisture from washed items in addition to the water heating energy and machine energy required by the washer. MEF units are expressed as ft<sup>3</sup>/kWh/cycle

<sup>12</sup> Savings represents total kWh only when water heating and drying are 100% electric.

<sup>13</sup> Illinois TRM 2012 - based on 2009 Residential Energy Consumption Survey (RECS) national sample survey of housing appliances section, state of IL: <http://www.eia.gov/consumption/residential/data/2009/>

<sup>14</sup> Illinois TRM 2012 - Calculated from Itron eShapes, 8760 hourly data by end use for Missouri



**Table 3-3. Clothes Washer Savings<sup>15</sup> by Efficiency Level**

Efficiency Level	MEF	MEF Savings (kWh)	MEF Savings (kW)
Baseline Efficiency <sup>16</sup>	1.64	0	0
Energy Star (CEE Tier 1) <sup>17</sup>	2.07	130	0.017
CEE Tier 2	2.28	177	0.023
CEE Tier 3	2.71	248	0.032

Source: Navigant analysis of the Illinois TRM

### 3.1.4 Gross Program Impact Results

Applying the recommended factors and data from the tracking system produces the PY4 Research Findings Gross Savings kWh estimates for clothes washers shown in Table 3-4. The resulting total program gross savings is 3,704 MWh which produces a realization rate of 149%.

**Table 3-4. PY4 Research Findings Gross Impact Savings Estimates (MWh)**

	Number of Units Sold in PY4	Gross Savings Estimates (MWh)	Average Unit Energy Savings (kWh)
Ex-Ante PY4 Gross Savings	21,463	2,484	115.7*
Research Findings PY4 Gross Savings	21,463	3,704	172.6
Realization Rate	100%	149%	-

\* Calculated by the evaluation team using PY4 gross claimed savings and units sold.

Source: Evaluation Team analysis.

Table 3-5 below provides the PY4 Research Findings Gross Peak savings estimates for the Clothes Washer Rebate program.

**Table 3-5. PY4 Research Findings Gross Demand Savings Estimate (kW)**

Number of Units Sold in PY4	Gross Savings Estimates (kW)	Unit Energy Savings (kW)
21,463	477	0.022

Source: Evaluation Team analysis.

<sup>15</sup> Assuming water heating and drying are both 100% electric.

<sup>16</sup> Illinois TRM - Average MEF of non-ENERGY STAR units from the California Energy Commission (CEC) database of Clothes Washer products.

<sup>17</sup> CEE Tier levels are levels of higher efficiency clothes washers developed by the Consortium of Energy Efficiency (CEE). The tier levels are developed to each be a certain percentage above standards based on energy and water consumption

### 3.1.5 Net Program Impact Parameter Estimates

Once gross program impacts have been estimated, net program impacts can be derived by multiplying the gross impact estimate by the Program's NTG ratio. The NTG ratio is equal to 1 minus the percentage of free riders (FR) plus the rate of spillover (SO). The evaluation recommended NTG ratio for the CWR program is 0.678, reflecting a free ridership rate of 32.2% and zero spillover. This program has not been evaluated before and so according to the NTG Framework,<sup>18</sup> the Net-to-Gross (NTG) ratio is to be applied retroactively. The program falls under the following condition from the NTG Framework: *"For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself — NTG ratios established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes."*

The participant survey indicates that there may be some spillover effects. The survey found that 39 out of 140 respondents stated that they purchased additional energy efficient (EE) appliances and said they were influenced to do so by their participation in the Clothes Washer Rebate program. These other products include refrigerators, air conditioners, and 'other' products. Though it appears that spillover is happening, the evaluation team did not collect enough information from participants to enable the team to quantify the spillover.

### 3.1.6 Net Program Impact Results

Table 3-6 provides the Research Findings net impact results for the PY4 Clothes Washer Rebate program. The NTG ratio is 0.678 and, when applied to evaluation-adjusted gross savings produces final net savings of 1,482 MWh.

Through conversations with ComEd program managers it was determined that there were no deemed per unit savings values established by ComEd for the Clothes Washers. The Evaluation Team developed research finding savings estimates which are shown in Table 3-6 (below) and applied these savings values to calculate gross savings. The evaluated NTG value was applied to calculated gross savings to estimate net savings. The ratio of ex-ante net savings to research findings net savings is 1.84.

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<sup>18</sup> "Proposed Framework for Counting Net Savings in Illinois." Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

**Table 3-6. PY4 Research Findings Savings Estimates**

Research Finding Savings Estimates	Energy (MWh)
Research Findings Program Gross MWh	3,704
Net-to-Gross Ratio	0.678
<b>Total PY4 Research Findings Net MWh Savings</b>	<b>2,511</b>
Net MWh Savings Claimed by the Program	1,366
<b>Ratio of ex-ante Net to Research Findings net</b>	<b>184%</b>
Verified Annual Net kW Savings Impacts	Recommended Program Total
Research Findings Program Gross kW	477
Net-to-Gross Ratio	0.678
<b>Total Fourth -Year Research Findings Net kW Savings</b>	<b>323</b>

Source: Evaluation Team EM&V Analysis

### 3.2 Process Evaluation Results

The process evaluation was based on telephone surveys with a large sample of program participants, interviews with the ComEd Program Administrator, and in-depth interviews with three participant retailers.

**Participant Telephone Surveys.** The process evaluation component of the participant telephone survey obtained information on drivers for customer participation, program satisfaction, and rebate/marketing satisfaction.

**Retailer/ComEd Program Administrator Surveys.** The interviews with participating retailers and the ComEd Program Administrator focused on the delivery of the program, the effectiveness of the program, and suggestions for improvement.

The process evaluation addresses the following questions:

- How aware are customers of the ComEd-sourced clothes washer rebates? How effective are the in-store displays and marketing materials?
- What is the driving force behind a customer's decision to participate in the program? How satisfied is the customer with the program's rebate process?
- What feedback do major retailers have regarding ComEd's Appliances Rebates program?
- How can the program be improved?

### 3.2.1 Customer Awareness and Effectiveness of Marketing Materials

Ensuring that customers are aware of a program is central to program success. Of the 140 program participants surveyed, 25 (17%) were unaware of the program or unaware that they had received an instant rebate.

Retailers are the primary sources of information about the program for respondents, even if they may not be telling every customer about the rebate. Less than 10% of the customers actually knew about the program prior to going to a retailer to purchase the clothes washer. Eighty-eight percent of customers learned about the program from the retailer as opposed to learning about the program through advertising or bill inserts. Over 92% of respondents found the information that they received from the retailers to be useful. Results showed that only 5% of were left wanting more information and those respondents felt that they did not receive enough information from the retailer or other sources. Customers who wanted more information were looking for more detailed information from the retailer, where to get additional information, or did not specify.

Customers were asked how they thought ComEd should reach out to customers to get more program participation. Table 3-7 outlines what customers wanted to see more of:

**Table 3-7. Responses on Methods for Reaching Additional Customers**

Method	# of respondents	% of respondents
Bill Inserts	34	29%
Flyers/Ads/other Mailings	29	25%
Television/Radio	14	12%
Other Advertisements	12	10%
Email	11	9%
Greater Retailer Use	10	9%
Social Media	8	7%
Online/ComEd Website	4	3%
Offer Higher Rebates/Other	11	9%
<i>Total Respondents</i>	<i>116</i>	<i>100%</i>

*Source: Evaluation Team analysis.*

As ComEd already provides bill inserts, greater frequency in delivering bill inserts should be considered as an effective means to gaining more program participation. ComEd's mass marketing campaigns are currently very limited with no television or radio promotions. The interview with the ComEd Program Administrator found out that these are promotion methods they would like to participate in, but currently do not have budget for.

### 3.2.2 Participation Driving Forces and Customer Satisfaction

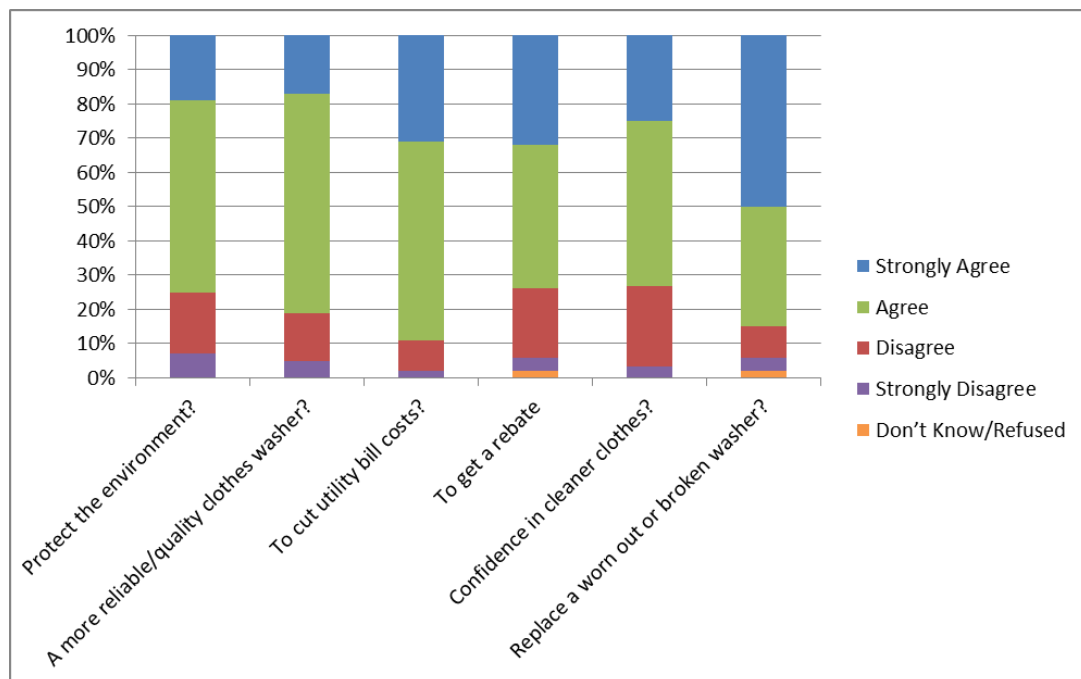
#### 3.2.2.1 Driving Participation Forces

The main driving force behind customers' initial consideration for buying a new clothes washer (based upon 77% of the participant respondents) was because their old washer had broken down or was showing signs that it was near the end of its useful life. Of the remaining respondents, 14% were reminded that they could reduce their monthly utility bill by upgrading to more efficient washer, 8% didn't have a washer or need one because of moving and 6% considered it because of the available limited time rebates.

Retailers were also a significant driving force behind participation. When asked about how they heard about the program, the vast majority customers (88%) heard about the program from the retailer. In addition, 92% of customers found the information they received from the retailers to be useful. Customers were also asked if the retailers influenced the specific model of washer they purchased and only 22% responded that the retailers had no influence.

The survey subsequently asked why customers actually participated in the program (*going further than asking why the customer initially decided to purchase a new clothes washer*). Thus, customers were asked a series of questions relating to their decision to participate in the program and get an energy efficient washer. Figure 3-1 outlines the findings from these questions.

**Figure 3-1. Reasons for Program Participation**



Source: Evaluation Team analysis.

The survey shows that cutting utility bill costs is an important program driver, with 89% of respondents either agreeing or strongly agreeing that cutting utility costs was a factor in their program participation. Confidence in a reliable, quality clothes washer and protecting the environment are both important drivers as well. These two factors received more agreement as driving factors than getting a rebate did, which show that consumers are participating in the program with more in mind than just getting a rebate.

When asked further about the rebate, 47% of customer-participant respondents reported that this was a critical factor in their decision to purchase a clothes washer (e.g., respondents answering 7 or higher on a scale of 0-10, with 0 being strongly disagree and 10 being strongly agree). Twenty-five percent of those respondents answered with a 3 or less, meaning that the rebate was not a critical factor at all.

### **3.2.2.2 Customer Satisfaction**

Responding customers have been very satisfied with the program. The majority of them (88%) were satisfied with the program (respondents answering with a 7 or higher on a scale of 0-10, with 0 being strongly disagree and 10 being strongly agree). In fact, 58% of those answered with a 10 meaning they were very satisfied and the mean score of respondents was 8.77. The few that were not satisfied either had issues with the equipment, did not think the program was explained well enough, or did not specify their dissatisfaction. Of the participating respondents, 34% have already recommended the program to others. Of the 66% who have not recommended the program to others, 89% said that they would recommend it in the future.

Program participants have been extremely satisfied with the rebate process and rebate information. Ninety percent of respondents asked about their satisfaction with the rebate process answered with a 7 or higher on a 0-10 scale. In fact, 70% of them answered with a 10 and the mean score of respondents was 9.15 – this is a very strong response. When asked about their satisfaction with the rebate *information* they received, 78% of respondents answered with a 7 or higher on a 0-10 scale with a mean score of 8.22.

The survey asked customers to rate their satisfaction with the retailers as well as the performance with their new clothes washer. Customers responded with overall high satisfaction with retailers, with an 8.5 out of 10 mean response and 0 customers responded that they were not satisfied at all. The majority of customers are also satisfied with the performance of their new clothes washer, with a mean score of 8.7 out of 10 being satisfied.

Program participants were asked a series of questions about the positive aspects of the program, some drawbacks and possible program enhancements. Table 3-8 outlines the responses for positive program aspects and percent of respondents agreeing with that responded with that aspect.

**Table 3-8. Positive Aspects of the Clothes Washer Rebate Program**

Positive Program Aspect	# of respondents	% of respondents
Efficiency of rebate processing/providing instant rebate	19	17%
Process was easy/seamless	9	8%
Satisfied with/grateful for providing rebate	8	7%
Retailer was informative and helpful/positive experience	8	7%
Sticker/advertisements for program	6	5%
Like the whole program	4	3%
Like the idea of the program (ex. Helping the environment)	2	2%
Need more advertising	2	2%
No/nothing/don't know	67	58%
<i>Total Respondents</i>	<i>115</i>	<i>100%</i>

*Source: Evaluation Team analysis.*

Table 3-9 outlines the responses for program drawbacks and the percent of participants that responded with that drawback.

**Table 3-9. Drawbacks to the Clothes Washer Rebate Program.**

Drawback	# of respondents	% of respondents
Retailers knowledge of the rebate program	3	3%
Not satisfied with equipment	3	3%
Incentive not high enough	1	1%
Other	5	4%
No Drawbacks	103	90%
<i>Total Respondents</i>	<i>115</i>	<i>100%</i>

*Source: Participant survey*

Table 3-10 outlines the responses for possible program improvements and the percent of participants that responded with that program improvement.

**Table 3-10. Possible Improvements to the Clothes Washer Rebate Program**

Possible Program Improvements		
Improvement	# of respondents	% of respondents
Greater publicity/ more advertising	15	13%
Higher Rebate	6	5%
More Bill Inserts/promotion to ComEd Customers	6	5%
Better program information/explanation	5	4%
Include more models/appliances	3	3%
More retailers/rebate availability	1	1%
Other	8	7%
None	76	66%
<i>Total Respondents</i>	<i>115</i>	<i>100%</i>

*Source: Participant survey*

Overall, customers appear to be very happy with the program – this appears to be especially true with the ease of the rebate process. About 90% of participants reported no drawbacks to the program and the few who did appeared to be outliers who had a poor experience with their retailer or purchased a faulty clothes washer. Customers would like to see greater publicity, advertising and bill inserts to better hear about these types of programs. Only a small percentage (5%) of respondents believes that the rebate is too low.

### **3.2.2.3 Influence of Program on Energy-Saving Behavior**

The ComEd Clothes Washer Rebate program has also led some customers to purchase more efficient appliances. Forty-one percent of customers answered 7 or higher on a 0 to 10 scale as to whether the program has influenced their decision to purchase more energy efficient appliances. The other appliances that have been purchase are clothes dryers, refrigerator/freezers, dishwashers, ovens/microwaves, furnaces and air-conditioning units.

ComEd customers have also decreased the amount of hot-water cycles that they use during clothes washing. Thirty-one percent reported decreasing the number of hot water cycles they are using which potentially creates additional energy savings for those savings. Overall, 69% of customers feel that their home is more energy efficient due to the program. This contributes to the overall spillover effect of this program; however, spillover is not calculated for this program as outlined in Section 4.1 under the spillover analysis.



### 3.2.3 Retailer Feedback

The Evaluation Team conducted in-depth interviews with three major retailers that are a representative sample of existing retailers and was approved by ComEd. Additionally, an in-depth interview was conducted with the ComEd Program Administrator. The purpose of these interviews was to gain feedback from retailers on the following points:

- Overall retailer satisfaction with the program
- Effectiveness of marketing techniques with their sales forces and in-store signage
- Satisfaction and effectiveness of ComEd training programs
- Suggestions for improvements on the program

Overall, the three retailers interviewed were very satisfied with the program and all seem to have a very good relationship with the ComEd Staff. The ComEd program administrator confirmed this as well, saying that overall she believes that the retailers have been satisfied and that ComEd has had no issues or conflicts with retailers.

From the retailer perspective the primary benefit of participating in the program is the instant rebate they can offer customers which provides a competitive advantage and an additional sales tool. The instant rebate is important since it is easy for customers to participate in the program and it provides the retailers with an easy “sales pitch” on the sales floor. The program also adds promotional value to the retailer as a participating program retailer with the additional link into their “green” messaging and initiatives.

The interviewed retailers all stated that the most effective way to gain customer participation was through their sales force. Most customers seem to learn about the rebate from talking directly to the sales staff than from the additional signage or display materials within the stores. All of the retailers stated it is very easy to gain customer interest. Since it is an instant rebate, most said that they have had very few or no customers turn it down for a lower efficiency machine.

All of the retailers responded that the training provided was very sufficient to support the program and that the frequent program updates were timely and informative. Everything appears to be explained very well and no retailer seemed to think that more training was required. One retailer spoke highly of the representatives for ComEd, stating that they are always willing to help and are very responsive to any needs.

The retailers did provide a few suggestions for the program. Most of them wanted to see an increase the number of models available. One retailer responded that there were a lot of good models out there that were within the program parameters. One very small retailer mentioned that he had suggested several models to be added to the program, but only a few actually were added. The retailer could not remember if all the suggested models were within the program parameters, but noted he felt very constrained as to what models could be offered to customers and felt ComEd was determining what is on their sales floor. Because of their small size, they wanted to include as many eligible models as possible to bring in the most customers, but the program choices limited their ability to provide even higher efficiency models to customers.

Another concern that was raised related to commercial customers participating in the program. This retailer would like to have some parameters or suggestions on how to police commercial customers who buy it under a residential name. Though additional training was provided for this, this retailer said that they still have at least 5-10 rebates a month that are rejected by ComEd because customers were commercial customers. The issue is that these customers purchased the machine as a residential customer and the retailer had no way of knowing that they were a commercial customer. A specific example that this retailer provided was a washer that was purchased by a customer at a residential address, but turned out to be a day care and commercial account at that address and the rebate was therefore rejected.

## 4. Findings and Recommendations

This section highlights the findings and recommendations from the evaluation of the clothes washer rebate program. The objectives of the evaluation were to: (1) quantify net energy and peak demand savings impacts from the program during Program Year 4 (PY4), and (2) determine key process-related program strengths and weaknesses and provide recommendations to improve the program.

Below are the key conclusions and recommendations.

### 4.1 Key Impact Findings and Recommendations

#### Savings Impacts:

**Finding.** The PY4 goal was to sell 28,000 - 30,000 efficient clothes washers and achieve a net savings of 1,786 MWh. The ex-ante net energy savings was 1,366 MWh and the evaluation-verified net energy savings is higher at 2,511 MWh.

**Recommendation.** ComEd should reevaluate their goals based on the evaluated per-unit savings outlined in the next finding. This will provide a more accurate estimate of goals.

#### Default Per Unit Savings Values:

**Finding.** Through conversations with ComEd, it was determined that the evaluation should develop its own per-unit savings values when examining the ComEd **program-level** PY4 ex-ante savings estimates. The Evaluation Team developed these default savings based on the calculations from the TRM and the default savings for different efficiency levels are laid out below in Table 4-1. The Evaluation Team has also calculated a net-to-gross savings value of 0.678.

**Table 4-1. ComEd Default Clothes Washer Savings by Efficiency Level<sup>19</sup>**

Efficiency Level	MEF	MEF Savings (kWh)	MEF Savings (kW)
Baseline Efficiency <sup>20</sup>	1.64	0	0
Energy Star (Tier 1)	2.07	130	0.017
CEE Tier 2	2.28	177	0.023
CEE Tier 3	2.71	248	0.032

Source: Navigant analysis of the Illinois TRM

<sup>19</sup> For Clothes Washers with 100% electric water heating and 100% electric drying.

<sup>20</sup> TRM - Average MEF of non-ENERGY STAR units from the California Energy Commission (CEC) database of Clothes Washer products.

**Recommendation.** ComEd should use the above default savings values for program tracking and gross savings estimates. The evaluated NTG value of 0.678 should also be used for net savings estimates.

#### **Net Program Impact Analysis:**

**Finding.** The evaluated NTG ratio is 0.678 based on a Free-Ridership rate of 0.322.

**Recommendation.** The structure of the Clothes Washer Rebate program lends itself to a relatively low NTG ratio by limiting the eligible clothes washers to a certain price and efficiency. It is understood that this is part of the program design; however, if the program also targeted higher-end clothes washers, the program could perhaps improve its NTG ratio.

#### **Spillover Analysis:**

**Finding.** The evaluation team found that the Clothes Washer Rebate program creates a spillover effect with participants purchasing additional energy efficient products. Twenty-eight percent of surveyed participants reported purchasing additional energy efficient products because of their experience with the Clothes Washer Rebate program. The exact number of energy efficiency products purchased by participants is not known – it should be clear that the additional purchases were not within the CWR program (e.g., not additional clothes washers, but additional energy efficiency products such as refrigerators, freezers, dishwashers, room A/Cs, etc.). It is difficult to accurately determine the exact energy savings for this program due to varying per-unit savings of among different energy efficiency product. However, this evaluation was not designed to study the spillover effects, therefore a spillover rate was not determined as much more information would need to be collected.

**Recommendation.** As we design the PY5 evaluation, the evaluation team will consider adding detailed survey questions regarding spillover to the participant survey so that we might be able to quantify spillover.

#### **Installation Verification Rate/Tracking Data:**

**Finding.** The evaluation installation verification rate for this program is 1.00. This is based on 100% of phone survey respondents answering ‘yes’ to a question asking if they recalled purchasing a new clothes washer.

**Recommendation.** All future programs should continue to track and verify the program in the same fashion as has been done in PY4.

## **4.2 Key Process Findings and Recommendations**

#### **Program Awareness Levels:**

**Finding.** About 17% of surveyed participant customers were unaware of the program or aware that they had received a rebate. Retailers are already required to inform all customers of the program and rebate every time an eligible clothes washer is sold. This is likely happening and

the majority of the aforementioned customers who were unaware of the program may have forgotten that they received a rebate.

**Program Incentive Levels:**

**Finding.** The program appears to be positioned well since the rebate amount and the ease of the instant rebate have left both the customers and the retailers satisfied. A very small percentage of customers wanted or suggested a higher rebate and retailers reported that the customers were much more interested and engaged in hearing/participating in the program due to the instant rebate.

**Recommendation.** Maintaining current rebate level and consider the instant rebate for all future rebate programs - both the customers and retailers are extremely happy with the program.

**Participant Satisfaction:**

**Finding.** Customers and retailer partners are highly satisfied with the program. Retailers did suggest expanding the eligible models in the program as well as developing a system to identify commercial customers participating as a residential customer to get the rebate for their business. This has led to some retailers losing the rebate for some washers sold.

**Recommendation.** Continue to operate the program as is since it will be ending at the end of PY5. However, future programs that look at this program as an example should make sure that the eligible models are expansive and do not limit the retailers. A system should also be worked out on how to deal with customers who are commercial customers but purchase the appliance as a seemingly residential customer. When this happens, the retailer has that invoiced rebate rejected and they end up not benefiting from those sales.

## 5. Appendix

### 5.1 Glossary

#### High Level Concepts

##### Program Year

- EPY1, EPY2, etc. Electric Program Year where EPY1 is June 1, 2008 to May 31, 2009, EPY2 is June 1, 2009 to May 31, 2010, etc.
- GPY1, GPY2, etc. Gas Program Year where GPY1 is June 1, 2011 to May 31, 2012, GPY2 is June 1, 2012 to 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 EPY4/GPY1 ComEd's deemed parameters were defined in its filing with the ICC. The Gas utilities agreed to use the parameters defined in the TRM, which came into official force for EPY5/GPY2.

**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 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<sup>D</sup>, HOU-Residential<sup>D</sup>).

**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<sup>E</sup>, HOU-Residential<sup>E</sup>).

**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<sup>DV</sup> (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<sup>AV</sup>

## Glossary Incorporated From the TRM

Below is the full Glossary section from the TRM Policy Document as of October 31, 2012<sup>21</sup>.

**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)**

<sup>21</sup> IL-TRM\_Policy\_Document\_10-31-12\_Final.docx



**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 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.

## 5.2 Detailed Net-to-Gross Calculations

### 5.2.1 Free Ridership Calculation

Each respondent was defined as either a free rider or not a free rider according to the logic shown in the table below and the percent defined as free riders for the set of respondents was then calculated. Anyone who failed to answer five or more of the free ridership questions was excluded from the analysis.<sup>22</sup>

	Question	Liberal	Recommended	Conservative
A2	Influence of the retailer on purchase decision is high	A great deal of influence = Not a free rider (28.1%)		
FR1+ FR2	At the time that you first heard about this program, had you...?	Had not thought about purchasing clothes washer = Not a free rider (28.9%)		
FR3	How likely is it that you would have purchased the clothes washer if you had not received a rebate through the program? (0-10 scale) <sup>23</sup>	<5= Not a free rider. (9.5%)	<4= Not a free rider. (7.8%)	<4= Not a free rider. (7.8%)
FR4	The program was a critical factor in your decision to purchase the clothes washer (0-10 scale)	>6 = Not a free rider. (47%)	>7 = Not a free rider. (31.3%)	>7 = Not a free rider. (31.3%)
FR5	I would have purchased the high-efficiency clothes washer within a year of when I did, even if I had not received a rebate through the program. (On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree)	0-4 = Not a free rider (18%)	0-3 = Not a free rider (14.7%)	0-3 = Not a free rider (14.7%)
D2a	Which of the following statements best describes how you made your purchasing decision?	Asked to see only models that received ComEd rebates = Not a free rider (20.6%).		
A1a	Which of the statements you just mentioned is single MOST important reason for your purchase decision?	Either the rebate (n=1) or being reminded of the value of reducing energy usage (n=2) = Not a free rider		
SCR2	Do you remember the program and rebate?	No effect	No effect	Do not recall rebate = Free rider <sup>24</sup>
	<b>Total Free Ridership</b>	<b>27.3%</b>	<b>32.2%</b>	<b>33.9%</b>

Source: Evaluation analysis of the Participant Survey

<sup>22</sup> There was a distinct break in the response patterns with several missing one or two questions, no one missing three to four questions, and 19 missing 5 or more questions.

<sup>23</sup> In future versions of this survey, the question wording should be focused so to ensure the respondent knows the survey is inquiring about the specific washer purchased as opposed to a general question about any washer.

<sup>24</sup> Applied after all other questions have been processed (and thus not overruled by other answers).

### 5.2.2 Questions used in the Free Ridership Analysis

The following is the exact wording of the questions used in the participant survey and the approach taken in calculating the free ridership result.

SCR2. The program... Do you remember the program?

1. YES [SKIPTO EQT1]

Not factored in free ridership.

2. NO, I don't recall having any clothes washer purchased in the past year (since May 2011)

Not factored in free ridership.

3. YES I had clothes washer purchased but I don't recall hearing about a ComEd rebate.

Liberal: Ignore question

Recommended: Ignore question.

Conservative: 3=100% free rider and applied after all other questions processed. (N=6, 5%)

A2. How much influence would you say the retailer you purchased the washer from played in your decision about which specific type of washer to purchase? Did the retailer have .....[READ LIST]  
If "1. A great deal of influence" then 0% free ridership. (28.1%)

FR1. At the time that you first heard about this program, had you...? [READ LIST]1. Already been thinking about purchasing a clothes washer?2. Already begun collecting information about clothes washers?3. Had not yet thought about purchasing a clothes washer? 3 = zero free ridership (20.7%)  
1,2, no change

FR2. Just to be sure I understand, did you have specific plans to purchase a new clothes washer before learning about the program?

No = zero free ridership. (12.1%) (FR1+FR2=28.9%)

FR3. On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have purchased the clothes washer if you had not received a rebate through the program?

Liberal: <5=zero free ridership. (9.5%)

Conservative: <4=zero free ridership. (7.8%)

In the future this question should be re-worded to ensure the respondent knows it refers to the specific model they purchased, not just any washer.

FR4-FR5. I'm going to read two statements about the clothes washer you received. On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with each statement.

FR4. There may have been several reasons for the purchase of the clothes washer, but the program was a critical factor in your decision to purchase the clothes washer.

Liberal: >6 = zero free ridership. (47%)

Conservative: >7 = zero free ridership. (31.3%)

FR5. I would have purchased the high-efficiency clothes washer within a year of when I did, even if I had not received a rebate through the program.

Liberal: 0 to 4 = zero free ridership. (18.2%)

Conservative: 0 to 3 = zero free ridership. (14.7%)

In the future this question should be re-worded to ensure the respondent knows it refers to the specific model they purchased, not just any washer.

D2a. Let me read three options and tell me which of the following statements best describes how you made your purchasing decision. [READ LIST]

1. I asked for information on all the options, including lower efficiency models.  
a. No change
2. I asked the retailer for the best overall unit and went with the recommendation.  
a. No change
3. I asked for models that met the ComEd rebate qualifications  
Zero free ridership. (20.6%)

A1a. Which of the statements you just mentioned is single MOST important reason for your purchase decision?

1. Your clothes washer broke down or gave signs that it was near the end of its useful life  
Not factored in free ridership.
2. You learned there were rebates or discounts available for a limited time  
Zero free ridership. (n=1, 0.7%)
3. You were reminded that you could reduce your monthly utility bills by upgrading to a more efficient clothes washer  
Zero free ridership. (n=2, 1.4%)

### 5.3 Data Collection Instruments

#### 5.3.1 Participant Survey

#### Participant Survey Questionnaire for ComEd Clothes Washer Program

PY4 – June 2011 – June 2012

Impact and Process Evaluations Residential Participant Survey <u>Telephone Survey Instrument</u> Questionnaire 09.28.12
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#### Interviewer Instructions

- Call is to be placed asking to speak to the person named in the customer contact information obtained from program records.
- If that person is no longer at the phone number of record, ask the respondent if they live at [customer address of record].
- If the individual of record no longer lives at address of record, take any info offered, thank them and end the call.
- Make at least 5 attempts to each customer at different times of the day/week.
- The purpose of the introductory script is to ensure the survey is answered by the primary decision maker involved in enrolling in ComEd Clothes Washer Rebate Program.
- Initial questions are to qualify the respondent.
- Acceptable respondents include: persons who signed up on behalf of a dependent person (e.g., older relative), but may not live at the target service address.

SAMPLE\_NO

CUST\_NAME (Name)

SERVICE\_ADDRESS

HOME\_PHONE

PROGRAM IN WHICH PARTICIPATED

PARTIC\_DATE

ComEd

## QUOTAS

[Strata]	Program Totals by Measure	Samples

## INTRODUCTION

INTRO1 [Preferred Intro] Hello, my name is \_\_\_\_\_, I'm calling on behalf of ComEd. Our records indicate that you received a rebate from ComEd toward the purchase of a new clothes washer and I want to ask you a few questions about your purchase decision and the rebate you received from ComEd. This is not a sales call.

May I speak with <CUST NAME>?

(ONCE CORRECT PERSON IS ON THE PHONE)

ComEd has asked us to contact you because we are evaluating ComEd's energy efficiency programs, and we'd like to talk briefly with you because our records show that you received a rebate from ComEd through their Clothes Washer Program this past year.

Are you the best person to speak with about the program and could talk about your household's experience with the ComEd Clothes Washer Program?

(IF NOT BEST PERSON ASK: Is there someone in the household at <SERVICE\_ADDRESS> who might recall the program and could talk about your household's experience with the ComEd Clothes Washer Program?)

1. CONTINUE WITH CUSTOMER ONCE THEY ARE ON THE PHONE
2. CUSTOMER NOT AVAILABLE [\[SCHEDULE CALLBACK\]](#)
3. NOT A GOOD TIME TO CONDUCT SURVEY [\[SCHEDULE CALLBACK\]](#)

## SCREENING QUESTIONS AND MEASURE IDENTIFICATION

SCR1. Do you live at <SERVICE\_ADDRESS>?

1. YES [\[SKIPTO SCR2\]](#)
2. NO
3. NOT NOW, BUT I DID LIVE THERE
888. Don't Know [\[SKIP TO THANK8\]](#)
999. Refused [\[SKIP TO THANK8\]](#)

SCR2. The Residential Clothes Washer Program gives a cash rebate for ComEd customers buying select ENERGY STAR labeled clothes washers. The rebate was provided to you upon sale so that the final sale price was reduced and you should have been informed that there was a rebate reducing the cost of the clothes washer you purchased. Do you remember the program?

1. YES [\[SKIPTO EQT1\]](#)
2. NO, I don't recall having any clothes washer purchased in the past year (since May 2011) [\[SKIP TO SCR2A\] – move to terminate call](#)
3. YES I had clothes washer purchased but I don't recall hearing about a ComEd rebate. [\[SKIPTO EQT1\]](#)
888. Don't Know
999. Refused

[QUALIFIED RESPONDENT – QAL STATEMENT]

EQT1. Was the clothes washer you purchased a top loading machine or a front loading machine?

- 1. Top Loader
- 2. Front Loader
- 000. NONE OF THE ABOVE [SKIP TO THANK2]
- 888. Don't Know
- 999. Refused

EQT1B. Did the washer you purchased replace a clothes washer at your home?

- 1. Yes
- 2. No
- 888. Don't Know
- 999. Refused

[IF EQT1B=1, ASK EQT2 and EQT3]

EQT2. What was the approximate age of your old clothes washer (i.e., the washer you replaced)?RECORD YEARS

[IF UNCERTAIN, ASK OPTIONS BELOW]EQT2a. Was the old clothes washer...

- 1. Less than 10 years old (purchased 2001 or later)
- 2. 11 to 20 years old (purchased 1991-2000)
- 3. 21-30 years old (purchased 1981-1990)
- 4. More than 30 years old (purchased before 1981)
- 888. Don't Know
- 999. Refused

EQT3. Compared to your old clothes washer, would you say that your new clothes washer is less efficient, the same efficiency or more efficient?

- 1. less efficient
- 2. Same efficiency
- 3. More efficient
- 888. Don't Know
- 999. Refused

## PARTICIPATION DECISION

A1. Thinking back to when you first considered purchasing a new clothes washer, which of the following statements best describes your purchase decision? [Record all mentioned AND also ask which the single MOST important reason was and record separately]

- 1. Your clothes washer broke down or gave signs that it was near the end of its useful life
- 2. You learned there were rebates or discounts available for a limited time



- 3. You were reminded that you could reduce your monthly utility bills by upgrading to a more efficient clothes washer
- 000. Other: (verbatim)
- 888. Don't Know
- 999. Refused

[\[ASK IF MORE THAN ONE ANSWER IN A1\]](#)

A1a. Which of the statements you just mentioned is single MOST important reason for your purchase decision?

- 1. Your clothes washer broke down or gave signs that it was near the end of its useful life
- 2. You learned there were rebates or discounts available for a limited time
- 3. You were reminded that you could reduce your monthly utility bills by upgrading to a more efficient clothes washer
- 00. (Other: (verbatim))
- 98. (Don't Know)
- 99. (Refused)

A2. How much influence would you say the retailer you purchased the washer from played in your decision about which specific type of washer to purchase? Did the retailer have .....[\[READ LIST\]](#)

- 1. A great deal of influence
- 2. A small amount of influence
- 3. Partial (some) influence
- 4. No influence at all
- 888. Don't Know
- 999. Refused

A3. Besides what you learned from retailers, did you independently seek out information about clothes washer?

- 1. YES
- 2. NO
- 888. Don't Know
- 999. Refused

[\[ASK IF A3=1\]](#)

A3A. Where did you seek out other information? [\[Record all the apply\]](#)

- 1. Another retailer
- 2. Friend/relative/neighbor
- 3. Internet search
- 4. ComEd website
- 5. ComEd call center
- 6. ComEd employee I know
- 7. Government (federal, state or local)
- 8. Print articles in magazine, newspaper

- 9. Previous knowledge/research
- 10. Reference books at library or bookstore
- 000. Other: (verbatim)
- 888. Don't Know
- 999. Refused

A3A.1. Did you consider purchasing the clothes washer on your own without a retailer, like over the Internet?

- 1. Yes
- 2. No
- 888. Don't Know
- 999. Refused

A4. Where did you hear about the Clothes Washer Program offered by ComEd? I'll read you a list.

[\[SELECT ALL THAT APPLY\]](#)

- 1. A ComEd bill insert
- 2. Appliance retailer
- 3. Word of mouth
- 4. The ComEd web site
- 5. Internet
- 6. Customer called ComEd to ask about reducing energy bill (Utility representative – other)
- 7. Through a homeowner's association or other organization
- 8. Through another utility program
- 888. Don't Know
- 999. Refused

[SKIP IF A4=98,99]

A4aa. Were there any other ways you heard about the program?

- 00. (Yes – Specify)
- 96. (No other ways)
- 98. (Don't know)
- 99. (Refused)

[\[ASK IF A4=1, 7 or 8, OTHERWISE SKIP TO A5\]](#)

A4a. Thinking about the information you received from the retailer or other sources, how useful was the information about the ComEd Clothes Washer Program? Would you say they were...

- 1. Very useful
- 2. Somewhat useful
- 3. Not very useful
- 4. Not at all useful
- 888. Don't Know
- 999. Refused

[ASK IF A4.1=3, 4]

A4b. What would have made the information more useful to you? [MULTIPLE RESPONSE]

- 1. More detailed information
- 2. Where to get additional information
- 000. Other: (verbatim)
- 888. Don't Know
- 999. Refused

[ASK A4C REGARDLESS OF ANY RESPONSES ABOVE]

A4c. How would you suggest ComEd try to reach out to their customers to get them to participate in this program? [DO NOT READ THE LIST - ALLOW FOR MULTIPLE RESPONSES]

- 1. With representatives
- 2. With phone calls
- 3. Flyers/ads/mailings
- 4. Bill inserts
- 5. Homeowners association
- 6. Greater use of retailers
- 7. E-mail
- 8. Social media
- 000. Other, specify
- 888. Don't know
- 999. Refused

A5. I'm going to read you a list of reasons we've heard why people participate in programs like this one. Please tell me if you STRONGLY AGREE, AGREE, DISAGREE OR STRONGLY DISAGREE with each reason as it applies to your decision to participate in the Clothes Washer Program.

[ROTATE A5A – A5G]

[For A5A – A5H, RE-READ SCALE FOR AT LEAST EVERY THREE ITEMS]

Do you strongly agree, agree, disagree or strongly disagree that you participated in the **Residential** Clothes Washer Program in order to...?

**Examples Answers:**

- 1. Strongly agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree
- 888. Don't know
- 999. Refused

A5A. Protect the environment

A5C. Have more confidence that you'd get a reliable, quality clothes washer

A5D. Have more confidence that you'd cut energy bills

A5E. Get a rebate

A5F. Have more confidence that your clothes washer would get the clothes clean

A5G. Replace a worn out or broken washer (e.g., decrease noise, smells, etc.)

A6. Are there any other reasons that you participated in the Residential Clothes Washer Program?

1. YES

2. NO [\[SKIPTO FR1\]](#)

888. Don't know

999. Refused

A6A. [\[ASK IF A6 = 1\]](#) What were the other reasons?

OPEN-END, RECORD VERBATIM RESPONSE, CLARIFY AS NECESSARY

888. Don't know

999. Refused

## FREE RIDERSHIP

FR1. At the time that you first heard about this program, had you...? [\[READ LIST\]](#)

1. Already been thinking about purchasing a clothes washer?

2. Already begun collecting information about clothes washers?

3. Had not yet thought about purchasing a clothes washer?

000. Other, specify

888. Don't know

999. Refused

[\[SKIP IF FR1=3\]](#)

FR2. Just to be sure I understand, did you have specific plans to purchase a new clothes washer before learning about the program?

1. Yes

2. No

888. (Don't know)

999. (Refused)

FR3. On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have purchased the clothes washer if you had not received a rebate through the program?

NUMERIC OPEN END from 0 to 10

888. (Don't know)

999. (Refused)

I'm going to read two statements about the clothes washer you received. On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with each statement.

FR4. There may have been several reasons for the purchase of the clothes washer, but the program was a critical factor in your decision to purchase the clothes washer.

NUMERIC OPEN END from 0 to 10

888. Don't know

999. Refused

FR5. I would have purchased the high-efficiency clothes washer within a year of when I did, even if I had not received a rebate through the program.

NUMERIC OPEN END from 0 to 10

888. Don't know

999. Refused

## RETAILER INFLUENCE

D1. When purchasing the new clothes washer, were you most concerned about the price (initial cost) or were you more concerned about getting the best value in terms of efficiency and features? [\[READ LIST\]](#)

1. Price (lowest cost)

2. Best Value

000.OTHER [use this response category for comments that suggest customer refuses to think of it as either/or decision, such as responses volunteering any the following: reliability, repair records, safety, manufacturer I knew, warranty, etc.]

888. Don't know

999. Refused

D2. Before you decided on the specific model you purchased, did you compare models of lower efficiency that didn't qualify for the ComEd rebates?

1. Yes

2. No

8. (Don't know)

9. (Refused)

[\[ASK IF D2=1\]](#)

D2a. Let me read three options and tell me which of the following statements best describes how you made your purchasing decision. [\[READ LIST\]](#)

4. I asked for information on all the options, including lower efficiency models.

5. I asked the retailer for the best overall unit and went with the recommendation.

6. I asked for models that met the ComEd rebate qualifications

000. OTHER

888. Don't know

999. Refused

D3. Did the store at which you purchased the clothes washer offer you models of lower efficiency as compared to the washer you purchased?

1. YES

2. NO

888. Don't know

999. Refused

## SPILLOVER AND REBOUND EFFECT

SR1. Since getting your new clothes washer, do you feel your household has become more energy efficient, less energy efficient, or stayed the same?

1. more energy efficient
2. less energy efficient
3. energy efficiency basically stayed the same
888. Don't know
999. Refused

SR2. Since getting the new clothes washer, have you changed your use of hot water vs. cold water during the washer cycles?

1. Yes, increased the use of hot water
2. Yes, decreased the use of hot water
3. No, kept the temperature setting the same as before
888. Don't know
999. Refused

SR3. Since getting the new clothes washer, has the Clothes Washer Program influenced or encouraged you in any way to purchase any additional energy efficient devices or equipment? Please rate this on a 0-10 scale, where 0 means not at all influential and 10 means very influential.

NUMERIC OPEN END from 0 to 10

888. Don't know

999. Refused

[ASK IF SR3>7 BUT NOT 98, 99]

SR3a. What did you purchase?

00. Record response
98. (Don't know)
99. (Refused)

## OVERALL PROGRAM SATISFACTION

PGMSAT. We'd like to understand how satisfied you are with your experience with ComEd's Clothes Washer program. Please choose a number between 0-and-10, where one means very dissatisfied and 10 means very satisfied. Thinking of your overall experience, how satisfied you are with ComEd's Clothes Washer Program?

NUMERIC OPEN END from 0 to 10

888. Don't know

999. Refused

PGMSAT2. [ASK IF PGMSAT is 5 or less] Your rating suggests that you were not fully satisfied. Could you tell me what kept you from full satisfaction?

OPEN-END, RECORD VERBATIM RESPONSE, CLARIFY AS NECESSARY

888. Don't know

999. Refused

## SATISFACTION WITH SUB-PROCESSES

S1. To make the rebate program work, there are many pieces you probably have forgotten about. I'd like to ask you about a variety of things that may have affected your experience. As I read the list, please rate each on a scale of 1 to 10, where 1 is not at all satisfied and 10 is very satisfied. For parts of the program that do not apply to you, just say so.

[DO NOT ROTATE – PROCESSES S1A-S1J]

[RE-READ SCALE FOR AT LEAST EVERY THREE ITEMS]

NUMERIC OPEN END from 1 to 10

777. Not Applicable

888. Don't know

999. Refused

Please rate your satisfaction with...

S1A. The ComEd rebate information you received

S1B. The retail staff

S1C. The speed in immediately processing the rebate at the point-of-sale

S1D. The quality of work by the retailer you purchased the new clothes washer from

S1E. The performance of the new clothes washer

S3a. Is there anything about the program that you think was done particularly well?

OPEN-END, RECORD VERBATIM RESPONSE, CLARIFY AS NECESSARY

888. Don't know

999. Refused

S3b. Do you see any drawbacks in participating in the Clothes Washer Program?

[DO NOT READ LIST - MULTIPLE RESPONSES, UP TO 3]

1. Incentives not high enough/not worth the effort

2. Retailer's knowledge of the rebate program

3. Cost of clothes washer

4. No drawbacks

000. Other, specify

888. Don't know

999. Refused

S3c. Is there anything about the program that you think could be improved?

OPEN-END, RECORD VERBATIM RESPONSE, CLARIFY AS NECESSARY

888. Don't know

999. Refused

## BUZZ FACTOR

BZ1. Have you recommended the program to people outside your household?

1. Yes

2. No, I have not recommended the program

- 888. Don't know
- 999. Refused

BZ1a [\[ASK IF BZ1=1\]](#) About how many people have you recommended the program to outside your household?

NUMERIC OPEN END

- 888. Don't know
- 999. Refused

{ASK IF BZ1 ≠ 1}

BZ2. Would you recommend the program to other people?

- 1. Yes
- 2. No
- 888. Don't know
- 999. Refused

BZ3. [\[ASK IF BZ2 = 2, 888 or 999\]](#) Why not?

OPEN-END, RECORD VERBATIM RESPONSE, CLARIFY AS NECESSARY

- 888. Don't know
- 999. Refused

## DEMOGRAPHICS

Q1. I have just a few questions left to ask for classification purposes. "First, do you own or rent the home at <SERVICE\_ADDRESS>?"

- 1. Own
- 2. Rent
- 000. Other, specify
- 888. Don't know
- 999. Refused

Q2. What type of home do you live in? Is it a... [\[READ LIST\]](#)

- 1. Single Family detached,
- 2. Single Family attached (duplex, town home, etc.)
- 3. Multifamily Apartment or Condominium
- 000. Other, specify
- 888. Don't know
- 999. Refused

Q3. How many people currently live full-time in that home, at least six months of the year, including yourself?

ENTER NUMBER OF PEOPLE

- 888. Don't know
- 999. Refused

Q4. It's helpful if we can analyze comments by age group. Would you please tell me your birth date?



Q5. I'm going to read a variety of broad income ranges, please stop me when I state the range of income relevant to your household before taxes? Is it... (IF NEEDED: We're collecting information from hundreds of customers, and it's helpful to know the income boundaries for sets of respondents. This information will not be retained after analysis.)

1. Up to \$30,000 per year,
  2. \$30,000 to under \$50,000,
  3. \$50,000 to under 75,000,
  4. \$75,000 to under \$100,000,
  5. \$100,000 to under \$150,000,
  6. \$150,000 to under \$200,000, or
  7. More than \$200,000?
888. Don't know  
999. Refused

Q6. GENDER (DO NOT ASK)

- 1 Male
- 2 Female
- 3 Unsure

THANK. Thank you for taking time to help with our survey and the helpful information you provided. Have a great day/evening!

**[DISPOS = 40]**

THANK2. Thank you for taking time to help with our survey. However, for this survey we are only interviewing those who have participated in ComEd's Clothes Washer Program

**[DISPOS = 25]**

THANK8. We cannot continue without that information. Thank you for your time. Have a great day/evening!

**[DISPOS = 24]**

### 5.3.2 Retailer Survey

#### ComEd Clothes Washer Rebate Participating Retailer Interview Guide October 2012

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with participating retailers in the Clothes Washer Rebate Program. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program's implementation, i.e., where they have significant experiences for meaningful responses. The interviews may also be audio taped and transcribed.*

Hello, my name is \_\_\_\_\_. I am calling from Navigant on behalf of ComEd, (a/k/a Commonwealth Edison). I received your contact information through ComEd. As part of an annual evaluation of ComEd's Clothes Washer Rebate Program we are speaking with retailers who participate in the program. Do you have a few minutes (no more than fifteen minutes) to speak with me about your experiences in the program?

#### **PROGRAM INVOLVMENT AND ROLES**

1. To start, what is your job title? Could you describe to me what your role is at <RETAILER> with regard to ComEd's Clothes Washer Rebate program?
2. As a participant in ComEd's Clothes Washer Rebate program, what types of program activities are you involved in (e.g., managing, selling, tracking the program at the store(s))?
3. How many of your store locations participated in ComEd's Clothes Washer Rebate program during Program Year 4 (which covered the June 1, 2011 to May 31, 2012)?
4. How did <RETAILER> learn about the opportunity to participate in ComEd's Clothes Washer Rebate Program? What made <RETAILER> decide you wanted to participate in the Clothes Washer Rebate Program?
5. What do you see as the benefits to <RETAILER> stores from participating in the program?

#### **MARKETING**

6. How does <RETAILER> inform your customers about the Clothes Washer Rebate Program? [Probe for (i) where the rebate discussion occurs in the point in sales process (sales floor vs. point-of-sale), interaction with customers, program signage, marketing, etc.]
7. How often would you say sales teams inform potential clothes washer customers about the program?

8. Have you used any marketing materials provided by ComEd in your retail stores? If so, which ones? (Probe for: flyers, display materials)
9. What types of sales messages do your salespeople use to highlight the Clothes Washer Rebate opportunity to your customers? [probe for rebate/incentive vs. convenience vs. environmental benefit.] Do they ever mention the program in their sales messaging for customers that are for buying a new appliance?
10. What would you say has been the most effective way of achieving customer participation?

#### **GAINING INTEREST IN THE PROGRAM**

11. Can you describe how you get customers interested in the program? [Probe for: point of sale; kiosk]
12. From your perspective, how smoothly do customers at your stores gain interest in the program?
  - i. How easy or difficult is it for your staff to get customers interested?
  - ii. Even though the rebate is immediate upon sale, are there ways to make the process easier and engage customer in the program.

#### **IMPLEMENTATION**

13. What, if any, training do your sales teams receive about the program? Have you attended any of the trainings? If so: How useful do you think the trainings are in preparing staff to implement the program?
14. How are details of the program communicated to your sales team? Do you know if your sales team clearly communicates the program details to customers? If so, how and what areas can be improved – how can we help?
15. How well do ComEd representatives keep you informed about the program? Do you receive all of the information you need about the program?
16. Is there anything that ComEd or your store could do to increase customer participation in the program?

#### **CUSTOMER AND GENERAL FEEDBACK**

17. Have your salespeople reported any experiences (positive or negative) regarding feedback from customers about the program? What have they reported? (Probe for frequent questions, adequacy of incentive amount).
18. What are the strengths of the program? What are the weaknesses of the program? Do you have any recommendations for ways to improve the program? If so, what?
19. Do you have any other comments or questions about the program that you would like to share?

### 5.3.3 Program Staff and Implementer Interview Guide

October 16, 2012

## ComEd Clothes Washer Rebate Process Evaluation:

### Program Staff and Implementer In-Depth Interview Guide

Contacts: Alicia Forrester and Dave Nichols

Name of Interviewee: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_ Company: \_\_\_\_\_

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with utility staff. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program's design and operation, i.e., where they have significant experiences for meaningful responses. The interviews will be audio taped and transcribed.*

### Introduction

Hi,

My name is [\_\_\_\_] and I'm calling from Navigant Consulting, we are part of the team hired to conduct an evaluation of ComEd's Community Energy Program. We're currently in the process of conducting interviews with program managers and key staff in order to improve our understanding of ComEd's programs. At this time we are interested in asking you some questions about the Clothes Washer Rebate Program. The questions will take about an hour and all feedback will be kept anonymous. Is this a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

### Roles and Protocols

1. Can you briefly summarize your role in the program, specifically:
  - a. What are your main responsibilities? Have these changed over time?
  - b. For how long have you carried these out? What percent of your time do you dedicated to the Program?
2. Can you explain who the key ComEd personnel involved in the program's implementation are, what their roles consist of, and how they interact? [Probe for all significant actors with responsibility in program delivery including implementer and service providers; also probe for Account Managers and External Affairs Managers]
  - a. What are the formal and informal communication channels between these groups?

- b. Who is responsible for marketing and outreach? [Probe if characterization is different from current understanding.]
- 3. Are there any documents other than the program guidelines that outline the roles and responsibilities of program staff?
  - a. Is there a marketing and implementation plan for the program?
  - b. If so, how can we arrange to obtain copies?

### **Overall Goals and Objectives**

- 4. Can you summarize the key savings and participation goals of the program (quantitative metrics)?
  - a. (If yes) Are the retailers reporting results at a pace that will result in design goals being met?
- 5. Can you summarize the key objectives of the program outside of the savings goals (qualitative metrics)?
- 6. Are there other performance metrics used to measure program performance? [Probe for details]

### **Program Theory**

- 7. What was the original motivation for launching this Program? Have the key goals of the original design been implemented and, if not, which goals are not being met?
- 8. In designing the ComEd Program, was the design team influenced by any other programs? If so, which ones, and were those entities contacted for perspective?
- 9. What are the market barriers the program seeks to overcome and how does the program address these barriers? [If necessary: by market barriers we're referring to anything in the market that would inhibit the adoption of more energy efficient measures, deeper savings per customer, etc.] (We are looking for cause-effect relationships between proposed intervention and actions taken for all steps in the chain of program delivery steps.).

Please clarify:

- a. Barriers to entry in ramping up the program
- b. Barriers to working with trade allies
- c. Long-term and short-term goals

### **Program Processes**

- 10. Can you summarize the process that was undertaken for the overall design of the Program; for example, the project design, the decision to offer a rebate, etc.?

11. Can you summarize the process used to recruit retailers to participate? How did retailers respond to participating? How involved was ComEd in assisting retailers with developing and implementing retailers' approach to assisting with the program?
12. Has the process for participation in the program changed at all from what is outlined in the start-up design documents and the initial plans filed by the Retailers?
  - a. If so, how has the process changed from the perspectives of the:
    - i. Retailers
    - ii. ComEd Staff
    - iii. others
13. Have the proposed plans been implemented according to plan by the retailers? If not- can you summarize changes?
14. In terms of leadership on behalf of the Retailers- can you characterize or summarize what are the character traits of those participating in the Program that have been the most effective leaders to date?
  - a. Have there been any efforts to incentivize good performance?
  - b. Have any retailers that have not performed to expectations been pulled (released) from the Program?
15. Based on your experience to date, if you could make any fundamental changes in the design of the Program or engagement with the Retailers - what would those changes be?
16. What feedback have you received to date from the Retailers on the Program, and overall process of participating and reporting?

## **Program Adjustments and Enhancements**

17. Has the design of the Program or the anticipated implementation changed since inception? If so, what/how? Why were the changes made?
18. Are there elements in design, structure, and/or operation that should be modified to make the Program work better? If so, what would you recommend? Why do you think this change is needed?

## **Marketing and Promotion**

19. Please describe the marketing and promotional efforts for the Program to date. [Probe for outreach to businesses or industry groups, trade shows and other association events] What are the differences in strategy with regard to reaching customers?
20. How have ComEd's other programs been used to educate customers about the Program or vice-versa? Are participants in any other programs provided with information about this Program? If so, has this strategy been successful?

21. How are Retailers involved in marketing the program? What is their role in conducting outreach to customers? What support and resources does the Program Administrator provide to help them accomplish this? [Probe for collateral materials and training] What have been the most effective marketing and promotion events?
22. Do you think the levels of marketing and promotion of the program has been appropriate so far? Do you think promotional efforts are successful? Do you think they reach the right audience?
23. Do you anticipate making any changes to marketing efforts? If so, please describe these changes. Do you have documentation of these changes? If so, how can we arrange to obtain copies?

### **Participating Retailers**

24. Can you describe the selection process for participating Retailers? [Probe for a list of criteria used to make selections.] How were Retailers recruited to the program? Why did ComEd select its total number of retailers? Why not more or less?
25. What type of orientation/assistance did ComEd provide to Retailers? Is training ongoing or one-time in nature? What type of feedback, if any, have you received about the training? Can we get copies of the training materials used?
26. What do you perceive to be the level of satisfaction among participating Retailers so far in the Program?
27. What feedback, if any, have you received from Retailers related to the program processes and implementation? If this information has not been collected, do you have any plans to solicit feedback and how?
28. Does anyone conduct quality control checks on participating retailers?

### **Cost Sharing & Implementation Incentives**

29. What has been the level of cost sharing and/or joint leadership on initiatives by the Retailers? What do you perceive the level of satisfaction to be with the level of financial support?

### **Data Tracking**

30. Can you briefly describe what data are tracked for the program? How well do you think this process works? Do you feel all important information is captured and stored in a way to best support program efforts? Is there any additional data you think would be useful? Is there a process of requesting additional data?
31. Who captures the data and how? *[Probe, if necessary: How do you get access to the data you need for daily program management?]* Can you describe the process for populating the program tracking database? How do you use the tracked data?
32. Is there a system in place to track customers that are referred to the custom and prescriptive programs? If so, how does it work? [Probe for type of data collected]

33. Is the system or systems used for data tracking linked with any other systems such as databases with customer account information or ones that track marketing activities?

### **Success and the Future of These Efforts**

34. In your opinion, how successful is the program? Why? What are its strengths? What are its weaknesses? Do you feel that free-ridership is a major concern for the program? *[Please explain.]*
35. What do you see as the main barriers for retailer participation in the program? [Probe for customers and trade allies] Do you have any thoughts on how these could be addressed by the program?
36. How has the economic downturn affected the program, particularly the level of participation/interest in the program and the decision to invest in energy efficiency?

### **Budget**

37. What is the total budget dedicated for:
- a. ComEd utility oversight (# of FTE's)
  - b. Others

### **Other**

38. Is there anything that was not included in the program launch that you feel should be included in future program years?
39. What are the key process-related issues you would like to see explored in this evaluation or future evaluations?
40. We're also planning to speak with several people in leadership positions with the Retailers. We would like to speak with a cross-section of participants (active, average, and low level of participation. Who should we talk to? What would you like to find out from each of these stakeholders?
41. Do you have any other comments or suggestions for us?

*Thank you very much for taking the time to assist us with this evaluation. Your contribution is a very important part of the process.*

*Do you mind if we follow-up with you by phone later, if additional questions arise?*