



Energy Efficiency / Demand Response Plan: Plan Year 2 (6/1/2009-5/31/2010)

Evaluation Report: Small C&I Lighting Program

Presented to

Commonwealth Edison Company

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Section E. Executive Summary

This report presents a summary of the estimated Program Year 2010 (PY2)¹ impacts resulting from the Small C&I Intro Kit Program that was operational during Program Year 2009 (PY1). During PY1, the Small C&I Intro Kit mailed out coupons to small commercial and industrial customers offering them free CFLs for use in their businesses. Customers who responded to this free CFL mailing were mailed three free CFLs along with a mini-catalog containing other energy efficient products, many offered at ComEd-sponsored reduced prices, that they could purchase for their businesses. The goal of this mini-catalog was to provide another point-of-entry to ComEd's Business Solutions program for small hard-to-reach customers. Originally, a survey of customers who had purchased items from this mini-catalog was planned for the PY2 evaluation to assess the effectiveness of the mini-catalog mailing. However due to the extremely low response to the mini-catalog, this evaluation effort was dropped. As a result, this PY2 report is focused entirely on reporting the impacts stemming from the delayed installation of the free PY1 bulbs.

E.1 Evaluation Objectives

As mentioned above, the objectives of the PY2 Small C&I Intro Kit program were altered due to the extremely low customer response to the PY1 mini-catalog mailing. As a result, the primary objective of this PY2 evaluation is to quantify the gross and net energy impacts resulting from the free CFLs that were distributed, but not installed, during PY1 and are believed to be installed during PY2 (referred to as PY1 Late Installs).

E.2 Evaluation Methods

Due to the reduced objectives of this PY2 evaluation, no primary data collection was undertaken. Estimated impacts for the PY1 Late Installs were generated based upon the following:

1. Secondary research concerning the attribution of savings from uninstalled program bulbs to future program years, and
2. Findings from the PY2 Residential Energy Star Lighting program PY2 evaluation (specifically concerning updates to residential coincidence factor (CF) estimates).

E.3 Key Findings

The goal of the Small C&I Intro Kit program in PY1 was to give away 100,000 free CFLs to small businesses within ComEd's service territory. A total of 156,883 free CFL offers were mailed and

¹ June 1, 2009 to May 31, 2010.



34,720 customers responded resulting in a total of 104,160 free CFLs being given away as part of the first year of the program. The PY1 evaluation found that only 32% of all of the bulbs distributed were installed by the end of the program year, leaving 68% of the bulbs to be installed in future program years. In a memo to ComEd dated April 8th 2010, the evaluation team recommended, based on an extensive secondary literature review, that 50% of uninstalled bulb savings should be attributed to the following program year (PY2) and the remaining 50% should be attributed to the 2nd subsequent program year (PY3). Hence, the PY2 impacts include the savings resulting from 50% of the PY1 uninstalled bulbs (which in the case of the Small C&I Intro Kit program equates to 34% of the overall PY1 bulbs). The balance of savings from the remaining 50% of uninstalled bulbs will be credited to the program in Year 3.

The PY1 evaluation also found that a large percentage of the program bulbs (nearly one-third) were installed in residences rather than businesses, and thus the savings from the PY1 bulbs were estimated using both residential and non-residential HOU and CF parameters. HOU and CF's are much lower for bulbs installed in residential locations than they are for bulbs installed in business locations. As part of the PY2 Residential Energy Star Lighting program evaluation, residential HOU and CF estimates were reevaluated and updated accordingly. These new residential estimates were also applied to the fraction of PY1 Small C&I Intro Kit bulbs assumed to have been installed during PY2 in residential locations.

Table E-1 below provides the PY2 savings estimates associated with the PY1 Late Installs based on these assumptions.

Table E-1. Ex-Post Program Savings

Gross and Net Parameter and Savings Estimates	PY1 Late Installs	
	Small Business	Residential
CFLs Distributed through the Program	25,068	10,412
Average Displaced Watts (Delta Watts)	48.3	
Average Daily Hours of Use	10.01	2.34
Gross kWh Impact per unit	176.4	41.2
Gross Connected kW Impact per unit	0.05	
Gross Realization Rate	100%	
Energy Interactive Effects	1.12	1.00
Demand Interactive Effects	1.19	1.00
Peak-Load Coincidence Factor	0.86	0.062
Total First-Year Gross MWh Savings	4,941	429
	5,370	
Total First-Year Gross Connected MW Savings	1.4	0.5
	1.9	
Total First-Year Gross Peak MW Savings	1.23	0.03
	1.3	
Net-to-Gross Ratio (1-FR)	56%	
Total First-Year Net MWh Savings	2,768	240
	3,008	
Total First-Year Net Connected MW Savings	0.8	0.3
	1.1	
Total First-Year Net Peak MW Savings	0.69	0.02
	0.7	

Source: ComEd PY1 Small C&I Final Report and PY2 Residential Lighting Report

The PY2 evaluation gross energy and peak demand savings were estimated to be 5,370 MWh and 1.3 MW, respectively. The net energy and peak demand savings were estimated to be 3,008 MWh and 0.7 MW, respectively. These savings estimates are based on the following assumptions:

1. A total of 35,480 program bulbs were installed during PY2 (34% of all PY1 bulbs). Two-thirds of these (25,068) are believed to have been installed in small business locations and the remaining third (10,412 bulbs) are believed to have been installed in residential locations.



2. The estimated *Displaced Watts* resulting from installing a program CFL was not changed from the PY1 evaluation estimate (48.3 Watts).
3. The *Peak Coincidence Factor* (CF) parameter estimates for the bulbs installed in Non-Residential locations during PY2 are the same as those used in the PY1 evaluation. However, the Residential CF parameter estimates have been updated based upon findings from the PY2 Residential ES Lighting program evaluation².
4. The *Gross Realization Rate* was set equal to 100%, since program bulb installation rates were accounted for in the PY2 program bulb estimate (#1 above).
5. The *Net-to-Gross Ratio* used to estimate net program savings for these PY1 Late Installs was set equal to 56% based on the PY1 Small C&I Intro Kit final evaluation report. No additional data was collected during this evaluation that would allow the evaluation team to update this parameter estimate.

² Navigant Consulting, Itron, Inc, Opinion Dynamics Corporation and Michaels Engineering, 2010. *Evaluation Report: Residential Energy Star ® Lighting*. December 2, 2010.