



Energy Efficiency / Demand Response Plan: Plan Year 3 (6/1/2010-5/31/2011)

Evaluation Report: Smart Ideas for Your Business Custom Program

Presented to

Commonwealth Edison Company

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Section E. Executive Summary

E.1 Evaluation Objectives

ComEd's three-year Energy Efficiency and Demand Response Plan, filed in November 2007 and approved in February 2008,¹ anticipates that the Custom program will provide 24% of the business portfolio nonresidential energy savings.

The goal of this report is to present a summary of the findings and results from the evaluation of the Program Year 3 C&I Custom program². The primary objectives of this evaluation are to quantify gross and net impacts and to determine key process-related program strengths and weaknesses and identify ways in which the program can be improved.

E.2 Evaluation Methods

For the PY3 impact evaluation, gross program impact results were developed based on detailed M&V for a selected sample of 32 projects and net impact results were developed based on survey data collected for 67 projects. Six research activities were conducted in support of the process evaluation: (1) interviews with program and implementation staff, (2) in-depth interviews with participating market actors, (3) in-depth interviews with ComEd Account Managers, (4) a quantitative telephone survey with 61 participating customers, (5) a quantitative telephone survey with 70 non-participating customers, and (6) a literature review and utility staff interviews regarding upstream bonuses for trade allies. Additional information about the evaluation data sources can be found in Appendix 5.2.

E.3 Key Impact Findings and Recommendations

The Custom program's third year (PY3) began in June 2010 and ended May 31, 2011. Combined the Custom and Prescriptive programs exceeded PY3 goals.

Table E-1 below provides reported ex ante and evaluation-adjusted net savings impacts for the PY3 Custom program. As shown in Table E-1, the PY3 evaluation found that verified gross energy savings were 15 percent lower than savings in ComEd's tracking system, as indicated by the realization rates (realization rate = verified gross / tracking system gross). The verified net-to-gross ratio, 0.56 for energy savings, was significantly lower than ComEd's planning value of 0.80.

¹ Commonwealth Edison Company's 2008 – 2010 Energy Efficiency and Demand Response Plan, Docket No. 07-0540, ComEd Ex. 1.0, November 15, 2007.

² The Program Year 3 (PY3) program year began June 1, 2010 and ended May 31, 2011.

Table E-1. Program-Level Evaluation-Adjusted Net Impacts for PY3

Segment	Ex Ante Gross *	Ex Post Gross	RR	Ex Ante Net **	Ex Post Net	NTGR (ex post gross)
kWh	55,555,278	47,432,812	0.85	44,444,223	26,434,465	0.56
kW	5,794	5,060	0.87	4,635	2,324	0.46

* Source: Ex ante savings from ComEd online tracking system, August 12, 2011

** Reported: Communication from ComEd. ComEd's reported net savings include a net-to-gross ratio of 0.8.

The relative precision at a 90% confidence level for the 32 Custom projects in the gross impact sample is $\pm 16\%$ for the kWh Realization Rate³ and $\pm 7\%$ for the kW Realization Rate. The relative precision at a 90% confidence level for the program NTG ratio is $\pm 9\%$ for kWh and $\pm 18\%$ for kW.

Table E-2 below provides an overview of gross impacts, net impacts, and other results that illustrate program accomplishments over the first three years of implementation.

Table E-2. Custom Program Results from PY1, PY2, and PY3

Program Result	PY1	PY2	PY3	Total
Ex Ante Gross kWh	8,410,846	26,805,344	55,555,278	90,771,468
Ex Post Gross kWh	6,606,461	22,697,187	47,432,812	76,736,460
Realization Rate	0.79	0.85	0.85	0.85
Ex Post Net kWh	4,760,526	17,255,274	26,434,465	48,450,265
Net-to-Gross Ratio	0.72	0.76	0.56	0.63
Number of Projects	75	345	887	1,307
Incentives Paid†	\$256,419	\$1,765,763	\$3,588,001	\$5,610,183

Source: Evaluation reports and ComEd program tracking system. Values shown have been rounded.

† Incentives as recorded in the ComEd program tracking system

Based on the sample size of 32 custom projects evaluated in PY3, the gross impact results yielded an energy realization rate of 0.85 which is considered to be high for a custom program. This shows that ComEd is continuing to do a good job of estimating gross impacts for Custom energy efficiency projects in the program. In general the implementation team did a very good job of ensuring that all measures are installed and operational. PY3 energy savings realization rate results indicate that the smallest projects (stratum 3, RR = 1.14) realized a greater proportion of the ex ante claims than the largest (stratum 1, RR = 0.81) and medium projects (stratum 2, RR = 0.57). The evaluation team hypothesizes that this may be due to the complexity

³ Note that the evaluation plan was designed to achieve 90/8 precision levels over the three year evaluation period from PY1 through PY3. Therefore, no precision targets were set for PY3 alone.

and additional uncertainty associated with the large projects in strata 1 and strata 2. The program can further improve the gross impact results by using improved data collection methods and enhanced calculation models. Key evaluation conclusions and recommendations include the following:

Improvements to Ex Ante Impact Estimates⁴

Finding. The program savings calculations did not always represent annual operating conditions. For example, the ex ante calculations were found to not accurately represent facility operating hours (e.g. #8557, and #5311, #5613 and #4367).

- **Recommendation.** To improve program calculations and realization rates, the program could do a better job of verifying operating hours and to examine whether or not the data collected represents typical annual operating conditions for the installed equipment. Adjustments should be made to energy usage calculations (if appropriate) based on information provided by the customer or other available sources.

Finding. The program calculations (specifically for compressed air projects) are not normalized to account for changes in facility production levels or equipment load profiles (e.g. # 7339, #6997 and #4371).

- **Recommendation.** Determine whether pre or post measurement data will require normalization to properly adjust for production differences including appropriate adjustments for weekly or seasonal variation or for market fluctuations. For compressed air projects energy usage calculations should be normalized if the airflow profile has changed from pre retrofit period to the post retrofit period.

Finding. The program calculations did not perform reasonable sanity or reality checks to verify the reasonableness and the range of estimated savings for projects that involved estimation of critical parameters (e.g. #2559, #8359 and #7461).

- **Recommendation.** Where possible collect site specific data through measurements in support of critical model parameters. Avoid using rules of thumb or percent savings from manufacturer literature. At a minimum verify all assumptions and estimates with appropriate considerations of site specific conditions. Additionally, implementers can obtain manufacturer performance data sheets or use Air Master+ software for compressor units and use them as needed to aid the ex ante calculations. When performing billing analysis, collect information to ensure that other factors

⁴ Additional specific site information is not available to protect customer confidentiality

(that might skew the savings) are accounted (i.e. miscellaneous loads, other energy efficiency measures and addition of new loads, etc.).

Finding. The peak kW calculations were not always consistent with PJM requirements or were not representative of the actual operation of the system during the peak period (e.g. # 6215, #3554 and #8568). Peak kW estimates were often set to zero.

- **Recommendation.** Calculate peak kW savings for all projects and ensure that the estimated savings meet PJM peak demand calculation requirements for weather and non weather dependent projects.

Finding. There were a number of cases where the sources of inputs used in the program calculations were not documented (e.g. #8557, #2234, #6215 and #5613). Also, sources for electric unit cost (\$/kWh) were not available and were found to vary considerably site-to-site.

- **Recommendation.** Provide sources for all the inputs and assumptions used for program calculations (especially for any critical parameters such as load factors, power factor, full load amps, temperature set points and operating hours). Collect nameplate or manufacturer information for all the equipment; the nameplate information can be used to verify inputs used for ex ante savings calculations.

Baseline Selection Issues

Finding. The baseline condition was adjusted (in the evaluation) for four projects, which had a significant effect on the total realized savings for two (#391 and #3820) projects. The most common problem observed is the use of pre-existing equipment as the baseline.

- **Recommendation.** One step that would improve the realization rate would be adjusting the baseline condition consistent with the evaluation approach when the existing equipment being removed has a relatively short remaining useful life or generally requires replacement.
 - Identify projects explicitly in program files as replace-on-burnout, natural turnover, or early replacement.
 - The age, remaining useful life, operating condition of the existing equipment and the estimated time at which the existing equipment would have been replaced in the future should be verified before selecting the existing equipment as the baseline condition.
 - The true test for early replacement should be whether or not there is strong evidence pointing to program induced accelerated adoption.
 - For the replace-on-burnout and natural turnover cases, baselines should be based on the efficiency of alternative new equipment or code requirements and not the existing in situ equipment.

Program Eligibility Requirements

- **Recommendation.** Program implementers should provide strong evidence and supporting documentation that clearly demonstrates that the installed higher efficiency equipment exceeds the efficiency of standard practice.

Data Collection

Finding. When the program collects measured data in support of ex ante impact calculations and uses that as a source for estimating savings or for model calibration, the resulting ex ante savings estimates were found to be more accurate (e.g. #8359, #1030, #3554 and #3454).

- **Recommendation.** The program should continue to take measurements for pre retrofit and post retrofit equipment. Measured performance of PY3 projects resulted in accurate savings calculations and high realizations rates (also reflected by the resulting high program RR). Projects with measured program data (obtained from logging or from a customer's SCADA system) were used by the evaluators to inform modeling and assign values to critical parameters. Evaluators do not have access to pre-installation equipment and conditions; therefore, ex ante measured data can greatly benefit the accuracy of ex post savings calculations. However, it is recommended that the program collect kW measurements and use amperage metering sparingly, such as when the panel size is too small to install kW current transducers or when only amperage data is collected in the SCADA system.

Net Impacts

Finding. Free-ridership levels for PY3 custom program are 44%, which represents a significant increase from 24% in PY2. Mean free-ridership was relatively high across the two largest projects (sampling strata 1).

- **Recommendation.** One approach to reducing free ridership is for program administrators to simply exclude projects from the program that they believe have a high probability of being free riders. For example, incentives should not be provided to projects that are already installed. Similarly, if there is evidence that the program did not contribute significantly to the decision to install a particular project or equipment type then an incentive may not be warranted. Incentives might only be provided if the program process leads to a higher efficiency level than initially planned. Consider tying performance of the program implementation staff (or implementer in general) not only with the gross impact but also with the verified net savings.

E.4 Key Process Findings and Recommendations

Trade Ally Network

Finding. PY3 marked the introduction of new trade ally requirements. While most interviewed trade allies saw no problems with these requirements, active non-trade ally contractors most often cite the time burden of attending the training in person as the main reason for not becoming a trade ally.

- **Recommendation.** Consider offering basic trainings online. If disseminating the information provided in the training is considered important to continue to increase the quality of applications, then the program should consider offering trainings via a web portal. This will allow more contractors to take advantage of the training opportunities and would reduce a barrier to becoming a trade ally.

Trade Ally Bonus

Finding. Additional research into trade ally bonuses offered by other utilities found that apart from the bonus structure, strong communication and clear expectations are crucial to the success of such an effort.

- **Recommendation.** The Smart Ideas program has already modified its bonus offering for PY4, adopting a tiered system modeled after Ameren Illinois' trade ally incentive structure. The program should strive to communicate the new bonus program early and clearly to both trade allies and non-ally contractors, and provide sufficient lead time for contractors to increase their promotion and take advantage of the offering to the fullest extent.

Program Marketing and Outreach

Finding. Lack of program awareness is still a key barrier to participation in the Smart Ideas program. In addition, reaching the correct decision-maker is a major hurdle both in increasing awareness of the program and encouraging participation. However, opportunities exist to increase participation in the Smart Ideas program among current non-participants. Almost two-thirds of non-participants indicate that there have been installations of equipment, or other upgrades, at their facility in the past three years. Despite the economic climate, customers are active in installing new equipment and have an interest in energy efficiency.

- **Recommendation.** The program should attempt to develop a more targeted database of energy decision makers for their larger customers. To start this database, Account Managers could be engaged to provide decision maker contact information for each of their managed accounts.

E.5 Cost Effectiveness Summary

ComEd uses DSMore™ software for the calculation of the Illinois TRC test. Table E-3 summarizes the unique inputs used in the DSMore model to assess the TRC ratio for the Custom program in PY3. Most of the unique inputs come directly from the evaluation results presented previously in this report. Measure life estimates and program costs come directly from ComEd. All other inputs to the model, such as avoided costs, come from ComEd and are the same for this program and all programs in the ComEd portfolio.

Table E-3 Inputs to DSMore Model for Custom Program

Item	Value Used
Measure Life	12
Utility Administration and Implementation Costs	\$684,212
Utility Incentive Costs†	\$2,878,922
Net Participant Costs	\$12,317,152

† Incentives from the ComEd accounting system based on actual invoices

Based on these inputs, the Illinois societal TRC for this program is 0.99 and the program does not pass the Illinois TRC test.

Section 1. Introduction to the Program

This evaluation report covers the Custom program element of the ComEd Smart Ideas for Your Business incentive program.

1.1 Program Description

The Commonwealth Edison Company (ComEd) Smart Ideas for Your Business program provides incentives for business customers who upgrade their facilities with energy efficient equipment. This incentive program is available to all eligible, nonpublic, commercial and industrial customers in ComEd's service territory. There were two specific program elements that were available to ComEd customers during program year 3 (PY3) under the ComEd Smart Ideas for Your Business incentives program:

Prescriptive Incentives were available for energy-efficiency equipment upgrades and improvements including lighting, cooling, refrigeration, and motors. Incentives were paid based on the quantity, size, and efficiency of the equipment. Incentives were provided for qualified equipment commonly installed in a retrofit or equipment replacement situation.

Custom Incentives were available to customers for less common or more complex energy-saving measures installed in qualified retrofit and equipment replacement projects. Custom measure incentives were paid based on the first year energy (kWh) savings. All projects were required to meet ComEd's cost-effectiveness and other program requirements.

Measures that are available through the Prescriptive program are not eligible for custom incentives. However, the applicant has the option to apply for a custom incentive if the entire project involves a combination of prescriptive and custom measures. The Prescriptive and Custom programs continued into program year 3, with minor changes to custom incentive levels and rebate options. The PY3 program included bonus payments to the trade allies. The bonus was in effect from September 1st through November 30th, 2010 (the day by which final applications had to be submitted). It was only available to trade allies and consisted of 5% of the total incentive amount for projects with incentives of \$10,000 or more.

Additional ComEd program offerings are provided under the Smart Ideas business program umbrella, including retrocommissioning and new construction services. The Illinois Department of Commerce and Economic Opportunity (DCEO) is responsible for delivering programs to ComEd customers targeted towards public nonresidential buildings such as

government, municipal, and public schools.⁵ These ComEd and DCEO programs are evaluated and reported separately.

The Smart Ideas for Your Business program is a key part of ComEd’s overall portfolio of programs approved by the Illinois Commerce Commission (ICC) as part of ComEd’s Energy Efficiency and Demand Response Plan, filed in November 2007 and approved in February 2008.⁶ The program is funded on an annual basis from June 1 to May 31 of each year.⁷ Funding in any given program year is limited to that year’s budgeted amount and, therefore, incentives are paid on a first-come, first-served basis until the program year’s incentive funds are exhausted. It should be noted that the Custom program is administered in conjunction with the Prescriptive program, which allows considerable flexibility to adjust program funding as needed between the Custom and Prescriptive programs. No Custom applicants were wait-listed in PY3, as funding was available to address all viable custom projects.

The net MWh savings goals and budgets for the 2011 (PY3) Prescriptive and Custom incentives program are presented in Table 1-1.

Table 1-1. Smart Ideas for Your Business PY3 Planned Savings Goals and Budgets

Program Element	Plan Target Net MWh	Plan Target Net MW	Plan Target Total Cost
Prescriptive Incentives	167,613	47.8	27,000,000
Custom Incentives	95,244	17.6	13,400,000
Total	262,857	65.4	40,400,000

Source: Commonwealth Edison Company’s 2008 – 2010 Energy Efficiency and Demand Response Plan, Docket No. 07-0540, ComEd Ex. 1.0, November 15, 2007. The program’s net savings goals include a net-to-gross ratio of 0.8 and a gross realization rate of 0.95.

1.1.1 Implementation Strategy

ComEd retained KEMA Services Inc. as its program administrator responsible for day-to-day operations. The Custom program was launched in June 2008.

ComEd has provided the evaluation team with a detailed Operations Manual and a Policies and Procedures Manual that describe the details of program implementation. Important aspects of program implementation are summarized in Appendix 5.3.1.

⁵ For more information on the DCEO programs please refer to (www.illinoisenergy.org).

⁶ Commonwealth Edison Company’s 2008 – 2010 Energy Efficiency and Demand Response Plan, Docket No. 07-0540, ComEd Ex. 1.0, November 15, 2007.

⁷ Program year 3 ran from June 1, 2010 through May 31, 2011.

1.1.2 Measures and Incentives for PY3

ComEd's Smart Ideas for Your Business Custom incentive program provides incentive payments for eligible energy efficiency projects. Custom program incentives are intended for less common or more complex energy-saving measures installed in qualified retrofit and equipment replacement projects. Custom incentives are available based on the project's kWh savings, assuming the project meets all program requirements. Incentives are based on the following formula:

For projects with less than a 5-year life, or for any involving Energy Management System programming, the program pays an incentive of \$0.03/kWh

For equipment with a 5-year life or greater, the program pays an incentive of \$0.07/kWh down to a minimum payback of one year and up to a maximum payback of 7 years.

The Custom incentive amounts noted above are applied for the first \$100,000 in incentives and then half that amount for the next \$100,000 in incentives up to the project cost cap.

Additionally, \$200,000 in incentives is available for Prescriptive measure installations, up to a total project incentive cap of \$400,000 per customer. Project incentives cannot exceed 50 percent of the total project cost (includes costs of equipment and contractor labor; excludes in-house labor) and 100 percent of the incremental measure cost.

The PY3 program application form is provided in Appendix 5.1, and includes a listing of project eligibility criteria, incentive levels and the general application process.

1.2 Evaluation Questions

The evaluation sought to answer the following key researchable questions.

Impact Questions:

1. What are the gross impacts from this program?
2. What are the net impacts from this program?
3. Did the program meet its energy and demand goals? If not, why not?

Process Questions:

The process evaluation questions for PY3 focused on the following key areas:

1. Program design and implementation changes in PY3
2. Changes to customer and trade ally program participation between PY2 and PY3
3. Effectiveness of program design and processes
4. Effectiveness of program implementation
5. Effectiveness of program marketing and outreach
6. Barriers to participation
7. Participant satisfaction

Section 2. Evaluation Methods

This section describes the analytic methods and data collection activities implemented as part of the PY3 process and impact evaluation of the Custom program, including the data sources and sample designs used as a base for the data collection activities.

A total of 887 Custom tracking records were reported. These records were submitted for incentive payments in a total of 884 unique Custom projects. They included HVAC measures (such as VSDs/VFDs, free cooling installations, chiller upgrades, and centralized thermostat control systems,) large commercial refrigeration measures, air compressor system upgrades, high-rise building domestic water pumping systems, industrial process renovations and custom, non-prescriptive lighting measures. Custom lighting measures are measures that are either not included under the Prescriptive program, or lighting measures that operate on a different schedule (i.e., 24/7) than the Prescriptive assumptions. Sometimes they include lighting measures that would qualify for the Prescriptive program, but the customer preferentially applies for the rebate under the Custom program. It is also noted that there are typically multiple lighting measures per tracking system record.

To support the gross impact evaluation objectives the PY3 evaluation activities performed on-site visits and detailed M&V for 26 Custom projects and thorough desk reviews for six (6) lighting projects. Furthermore, telephone surveys were completed for 67 Custom projects to address evaluation process and net-to-gross objectives. The key evaluation activities were:

Conduct on-site visits, M&V activities and desk reviews. These activities seek to develop independent ex post estimates of savings, and to update, refine or replace the calculation procedures that were submitted as part of the final application submittal.

Conduct CATI telephone surveys for 67 Custom projects to support the net impact approach (as described in greater detail in the Net Program Savings section, 2.1.2 below). Survey data collection purposefully includes all 32 gross impact points in an effort to coordinate NTG and gross impact estimates, conclusions and to obtain the best possible story line supporting both efforts. As was the case for PY1 and PY2, the Basic rigor NTG approach was predominantly used in PY3. For PY3 evaluation, only two Custom projects were sufficiently large to trigger a Standard rigor approach.

These same CATI surveys support the process evaluation. While additional process only surveys were originally envisioned in order to ensure more robust process findings, only a total of 67 completes was feasible.

The sections that follow provide greater detail on the methods deployed.

2.1 Analytical Methods

2.1.1 Impact Evaluation Methods

Gross Program Savings

The objective of this element of the impact evaluation is to verify the veracity and accuracy of the PY3 ex ante gross savings estimates in the Custom program tracking system. The savings reported in ComEd's online tracking system were evaluated using an M&V approach in some instances and desk reviews in others. The following M&V steps also apply to desk reviews except where noted:

1. Develop a site-specific M&V plan for a representative sample of program projects. Each M&V plan details the data collection and analysis approach to be undertaken, following a careful review of relevant documents stored in ComEd's online tracking system, including the Final Application submittal and the application-based calculations. Sometimes each plan is further refined based on a brief interview with the customer representative over the phone.
2. Implement a site-specific data collection approach for each sampled project. The focus of the data collection is to verify and/or update the assumptions that feed into engineering algorithms of measure level savings. Data collection also includes verification of measure installation and that the systems are functioning and operating as planned, and if not then in what way(s) there is variance.
3. Perform on-site measurement or obtain customer-stored data to support downstream M&V calculations. Measurement data obtained from the sites are used to calibrate the analyses, as measured parameters typically have the least uncertainty of any of the data elements collected. Measurement includes spot measurements, run-time hour data logging, and post-installation interval metering. Customer-supplied data from energy management systems (EMS) or supervisory control and data acquisition (SCADA) systems are often used when available. Desk reviews do not incorporate on-site data collection. Desk reviews instead involve customer interviews to collect operating schedules, review invoices to confirm quantity of installed fixtures, use manufacturer data or the standard wattage tables to verify fixture wattages and review of ex ante calculations to verify the reported savings.
4. Complete ex post engineering-based estimates of gross annual energy (kWh) and summer peak demand (kW) impact for each sampled project. A site specific analysis is performed for each point in the impact sample. The engineering analysis methods and degree of monitoring will vary from project to project, depending on the complexity of the measures installed, the size of the associated savings and the availability and reliability of existing data. Gross impact calculation methodologies are generally based on IPMVP protocols, options A through D. At a minimum, the ex post impact evaluation

incorporates the following additional information that may not have been feasible to incorporate in Final Application submittal:

- a. Verification that measures are installed and operational, and whether or not the as-built condition will generate the predicted level of savings.
 - b. Observed post-installation operating schedule and system loading conditions.
 - c. A thorough validation of baseline selection, including appropriateness of a retrofit vs. replace on burnout claim.
 - d. Development of stipulated and measured engineering parameters that contribute to the impact calculations.
5. Prepare a detailed, site-specific impact evaluation report for each sampled site.
 6. Carry out a quality control review of the ex post impact estimates and the associated draft site reports and implement any necessary revisions.

A verified gross realization rate (which is the ratio of the ex post gross savings-to-reported tracking savings) was then estimated for the sample, by sampling stratum, and applied to the population of reported tracking savings, using sampling-based approaches that are described in greater detail in Sections 2 and 3 below. The result is an ex post estimate of gross savings for the Custom program.

Additional information regarding the gross impact methods can be found in Appendix 5.3.2 including baseline assessment, production adjustments, data collection and quality control methods.

Net Program Savings

Net Program Savings

The primary objective of the net savings analysis for the Custom program was to determine the program's net effect on customers' electricity usage. After gross program impacts have been assessed, net program impacts are derived by estimating a Net-to-Gross (NTG) ratio that quantifies the percentage of the gross program impacts that can reliably be attributed to the program. A customer self-report method, based on data gathered during participant phone surveys, was used to estimate the NTG ratio for this evaluation.

For PY3, the net program impacts were quantified solely on the estimated level of free-ridership. This requires estimating what would have happened in the absence of the program. The existence of participant spillover was examined in PY3 but spillover was not quantified.

Once free-ridership has been estimated the Net-to-Gross (NTG) ratio is calculated as follows:

$$\text{NTG Ratio} = 1 - \text{Free-ridership Rate}$$

Additional information regarding the net impact evaluation methodology can be found in Appendix 5.3.3 including the table with summarized scoring approach and spillover assessment methodology.

2.1.2 Process Evaluation Methods

Six research activities were conducted in support of the process evaluation: (1) interviews with program and implementation staff, (2) in-depth interviews with participating market actors, (3) in-depth interviews with ComEd Account Managers, (4) a quantitative telephone survey with 61 participating customers, (5) a quantitative telephone survey with 70 non-participating customers, and (6) a literature review and utility staff interviews regarding upstream bonuses for trade allies. These activities are further described in Appendix 5.3.4.

2.2 Sampling

ComEd's tracking database extract dated 4/5/2011 was used to select 17 M&V sample points. The tracking database extract dated 7/13/2011 was used to select 16 more M&V sample points, for a total of 33. After completing the site visits, one of the original 17M&V sample points was moved into PY4. Therefore, a total of 32 M&V sample points were evaluated in PY3. For telephone surveys, 33 sample points were selected using the 4/5/2011 database extract, and 34 additional sample points were selected using the 7/13/2011 database extract.

2.2.1 Profile of Population

Using the 4/5/2011 tracking extract, custom records were sorted and placed in three strata using ex ante savings kWh to create roughly equal contributions to total program savings. When the 7/13/2011 extract became available, the strata boundaries defined on 4/5/2011 were preserved. The 16 additional M&V sample points were selected so that the sample reflects the final population distribution of savings within each stratum.

Sampling for the Custom program was completed for ex post gross M&V-based evaluation, as well as a telephone survey supporting ex post net impact evaluation and the process evaluation.

Table 2-1 presents each of three strata developed for sampling within the Custom Program, which consists of a total of 887 tracking records comprising 884 unique Custom projects. The number of records is presented by strata, along with ex ante gross kWh claimed, ex ante gross kW claimed, and the amount of incentive paid. Note that the Custom tracking system based peak demand estimates are populated more completely than in PY2, with only 346 out of 887 records showing zero ex ante kW savings. Because ComEd's application form does not request that the applicant submit an estimate of kW savings, it is unknown if some of the 346 records have ex ante kW savings different than zero. This might mean that ComEd is underestimating the Custom program's ex ante kW savings, and makes the estimation of ex post gross kW impacts less accurate than optimum.

Table 2-1. PY3 Custom Program Participation by Sampling Strata

Sampling Strata	Ex Ante kWh Impact Claimed	Ex Ante kW Impact Claimed	Tracking Records	Incentive Paid to Applicant
1	10,694,836	897	2	\$626,358
2	22,036,229	2,031	27	\$1,525,331
3	22,824,213	2,865	858	\$1,436,311
TOTAL	55,555,278	5,794	887	\$3,588,001

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 2, 2011.

2.2.2 Gross Impact M&V Sample

Before final sample selection, the tracking extract was reviewed to check for outliers and missing values, and then matched to ComEd’s reported energy savings. Some projects contain both Custom and Prescriptive measures (combined projects). The Custom and Prescriptive programs were evaluated through different approaches by necessity, so the evaluation team included all custom measures within the Custom evaluation, and all prescriptive measures within the Prescriptive evaluation. As a result, 314 combined projects have measures within each of the two evaluations. Site visits and phone surveys were coordinated by assigning combined projects to one evaluation or the other to avoid multiple contact attempts.

Program-level Custom savings data were analyzed by project size to inform the sample design for this population of heterogeneous measures. Using the 4/5/2011 extract, projects were stratified at tracking record level using the ex ante kWh impact claim. Records were sorted from largest to smallest Custom kWh claim, and placed into one of three strata such that each contains one-third of the program total kWh claim. The project distribution changed between 4/5/2011 and the final extract dated 8/2/2011, but the strata boundaries defined using the 4/5/2011 extract were preserved. In the final extract, the two largest records were assigned to “strata 1,” the next largest 27 records were assigned to “strata 2,” and the smallest 858 records were assigned to “strata 3.”

The Custom evaluation plan called for a target sample of 33 records in the ex post gross impact M&V sample. This sample was drawn such that the sample represents the final population distribution by strata: the two records in strata 1 were selected, 15 records out of 27 were randomly selected in strata 2, and 15 records out of 858 were randomly selected in strata 3. Each of the records selected represents just one Custom project. Note that a third project from stratum 1 was moved into PY4 after the impact team had completed the field work, so the final impact sample only contains 32 records representing PY3.

Profile of the Gross Impact M&V Sample

Table 2-2 provides a profile of the gross impact M&V sample for the Custom program in comparison with the Custom program population. Shown is the resulting sample that was drawn, consisting of 32 applications, responsible for 24.9 million kWh of ex ante impact claim and representing 45% of the ex ante impact claim for the program population. Also shown is the ex ante-based kWh sample weights for each of three strata.

Table 2-2. PY3 Custom Program Gross Impact Sample by Strata

Custom Population Summary				Impact Sample		
Sampling Strata	Number of Records (N)	Ex Ante kWh Impact Claimed	kWh Weights	Number of Records (n)	Ex Ante kWh	Sampled % of Population kWh
1	2	10,694,836	0.19	2	10,694,836	100%
2	27	22,036,229	0.40	15	13,058,181	59%
3	858	22,824,213	0.41	15	1,178,003	5%
TOTAL	887	55,555,278	-	32	24,931,021	45%

2.2.3 CATI Telephone Survey

Sampling

Per the evaluation plan, the target for the participant survey was to complete 66 interviews in support of the net impact evaluation and 104 interviews in support of the process evaluation.

For telephone surveys, the unit of sampling is the project contact. To develop the sample of unique project contacts, duplicate contact names were removed from the sample where a single person was involved in more than one project application. In addition, contacts who also completed Prescriptive Program projects could only be contacted once regarding one of the projects (or project components if the project yielded both Prescriptive and Custom savings). Because fewer Custom projects were completed compared to the Prescriptive Program, Custom projects were given preference over Prescriptive ones. Ultimately, the Custom sample frame included 200 unique contacts.

To best support the net impact analysis, projects from the April 5, 2011 database (wave 1) extract were sorted from largest to smallest Custom kWh claim and placed into three strata such that each stratum contained approximately one-third of the savings. The final August 2, 2011 extract indicated that two of the largest projects had been moved into PY4. Since the strata boundaries from the first wave were retained for the second wave, the stratum with the largest

projects contained only approximately 20% of overall PY3 savings, while the other two strata each contained 40%.

Three contacts (two representing stratum 1 projects and one representing a stratum 2 project) were not included in the CATI survey but were interviewed by a Senior Consultant.⁸ As a result, the final sample frame for the CATI survey included 197 contacts, 22 in stratum 2 and 175 in stratum 3.

The CATI survey was conducted in two waves: the first wave focused on 56 applications that were part of the impact field sample, yielding 22 completed interviews (7 from stratum 2 and 15 from stratum 3). Given that the Custom program only had 197 unique contacts, in order to obtain enough survey responses for our analysis, the second wave included *all* remaining 141 contacts, yielding an additional 39 completed interviews, for a total of 61 survey responses.

Given that the ultimate sampling approach for the participant survey was a census attempt, there is no need for estimating precision levels for the sampling effort. In other words, there is no sampling error and the error bounds are zero.

Sample Weights

Table 2-3 summarizes the 67 participant interviews completed in support of the NTG analysis. The completed interviews represent 25.5 million kWh of ex ante impact claim, which is 46% of the ex ante impact claim of the program population.

Table 2-3. Profile of the Participant Survey Net-to-Gross Sample by Strata

Program Population Summary				Completed Interviews		
Sampling Strata	Number of Records (N)	Ex Ante kWh Impact Claimed	kWh Weights by Strata	n	Ex Ante kWh	% of Population Impacts Surveyed
1	2	10,694,836	0.19	2	10,694,836	100%
2	27	22,036,229	0.40	13	10,675,623	48%
3	858	22,824,213	0.41	52	4,172,633	18%
TOTAL	887	55,555,278	-	67	25,543,092	46%

Source: Program tracking database; results of CATI telephone survey.

⁸ These interviews included net impact questions as well as a subset of process questions.

Table 2-4 provides a summary of the survey results for the process analysis. The table shows that the 61 completed interviews represent 31% of unique contacts in the population.

Table 2-4. Summary of Sampling Approach for Process Analysis

Sampling Strata	Number of Unique Contacts in Population (N)	Number of Surveyed Contacts (n)	% of Contacts Surveyed
1	2	-	-
2	23	11	48%
3	175	50	29%
TOTAL	200	61	31%

Source: Program tracking database; results of CATI telephone survey.

For the process analysis, the evaluation team concluded that an un-weighted analysis provided the best representation of results.

Survey Disposition

Table 2-5 below shows the final disposition of the participant survey. The dispositions show the concerted effort made to complete the target number of interviews with a very small sample. The resulting response rate was 34% (computed as the number of completed surveys divided by the number of eligible respondents⁹).

⁹ Eligible respondents include the following dispositions: (1) Completed Survey, (2) Unable to Reach, (3) Callback, and (4) Refusal.

Table 2-5. Sample Disposition for NTG and Process Analyses

Sample Disposition	Customers	%
Population of Unique Customer Contacts	200	
Completed Survey	64	32%
Not Dialed	-	-
Unable to Reach	56	28%
Callback	35	18%
Refusal	34	17%
Phone Number Issue	11	6%
<i>Response Rate</i>	34%	

Source: ODC CATI Center.

Profile of Survey Respondents

The highest number of survey respondents is from heavy industry (25%). This sector is overrepresented among survey respondents, relative to its representation in the population (16%). This is not surprising, given that the Wave 1 sampling strategy focused first on projects included in the gross impact sample (generally those with the highest savings), and projects in this sector are significantly larger than projects in the other sectors. Conversely, the retail/service sector, which has among the smallest per project savings, is underrepresented in survey responses. Overall, the distribution is largely similar to that of the population of PY3 Custom Program participants.

Table 2-6 presents the comparison of business sectors for survey respondents and the overall population of participants.

Table 2-6. Business Sector of Survey Respondents

Sector	Respondents (n=61)	Population* (N=200)
Heavy Industry	25%	16%
Light Industry	16%	18%
Office	15%	13%
Retail/Service	15%	24%
Restaurant	7%	7%
Warehouse	5%	6%
Grocery	5%	3%
School/College	2%	1%
Medical	0%	4%
Hotel / Motel	0%	2%
Miscellaneous	11%	8%

**Note: The population is based on the final sample frame and excludes the 4 contacts that were set aside for the Prescriptive participant survey.*

Source: Program Tracking Database.

2.2.4 CATI Telephone Survey of Non-Participating Customers

A quantitative telephone survey was implemented with a random sample of business customers who have not participated in the Smart Ideas for Your Business Program in the first three program years. This survey resulted in 70 completed interviews.

Sampling

The sample of non-participants was based on the database of all business customers provided by ComEd. One of the objectives of the Smart Ideas for Your Business Program in PY3 was to generate more large projects. The non-participant survey therefore focused on delivery service classes for customers with medium and large energy demand (including rate classes C29, C30, C31, and C32). Excluded from the sample frame were customers with small energy demand (class C28, <100 kW).

Removing the small class customers resulted in 23,130 records in the sample frame. We also removed from the sample frame 11,272 records associated with customers who participated in the program, or submitted applications, in the first three program years (based on account number, telephone number, or company name). We then randomly selected 1,500 customers for the sample frame. After removing duplicate contacts, our final sample frame consisted of 1,439 unique contacts.

Table 2-7 compares the distribution of all ComEd business customers with the distribution of Smart Ideas for Your Business Program participants, by delivery service class. The table shows that more than 90% of ComEd customers are in the small class, compared with 53% of all participants.

Table 2-7. Summary of Participation in Smart Ideas for Your Business Program

Delivery Service Class	All Customers		Participants	
	Freq.	Percent	Freq.	Percent
C28-Small (0 - 100)	242,041	91%	2,795	53%
C29-Med (100 - 400)	17,478	7%	1,282	24%
C30-Large (400 - 1000)	4,121	2%	758	14%
C31-Very Large (1000 - 10,000)	1,517	1%	453	9%
C32-Extra Large (> 10 MW)	14	<1%	3	<1%
Total	265,171		5,291*	100%

**Note: Participants were assigned a delivery service class by matching their account number to the ComEd customer database. Of the 5,902 unique participant account numbers, 611 did not match to the customer database.
Source: Customer Database; Program tracking databases*

Survey Disposition

Table 2-8 below shows the final disposition of the 1,439 unique contacts included in the sample frame for the non-participant survey. Contact with 100% of the sample was attempted at least once, resulting in 70 completed surveys.

Overall the response rate for this survey was 6% computed as the number of completed surveys divided by the number of eligible respondents.¹⁰

¹⁰ Eligible respondents include the following dispositions: a) Completed Surveys, b) Unable to Reach, c) Callback, and d) Refusal.

Table 2-8. Sample Disposition for Non-Participant Survey

Sample Disposition	Customers	%
Total Sample	1,439	
Completed Survey	70	5%
Not Dialed	-	-
Unable to Reach	274	19%
Callback	369	26%
Refusal	534	37%
Phone Number Issue	187	13%
Language Problems	5	3%
<i>Response Rate</i>	6%	

Source: ODC CATI Center.

Profile of Non-Participant Survey Respondents

Surveyed non-participants come from a variety of business sectors. Sixteen percent classify their business as a government/public sector or non-profit entity, 11% as retail/service, and 10% as light industry. A majority of respondents (80%) own their facility. In addition, 44% of the businesses only operate at one location, 43% have several locations, and 10% are located at the headquarters of their company. It should be noted that the 16% of non-participants classified as government/ public sector are not eligible to participate in ComEd’s program. The Illinois Department of Commerce and Economic Opportunity (DCEO) is responsible for delivering programs to ComEd customers classified as government/ public sector customers.

Section 3. Program Level Results

This section presents the Custom program impact and process evaluation results.

3.1 Impact

3.1.1 Tracking System Review

To support the impact evaluation, the evaluation team was given direct access to ComEd's on-line tracking system and data. The on-line system was easy to work with and provided viewing access to the project tracking data plus downloading rights to project documentation in electronic format for each project. This documentation was complete and greatly facilitated the evaluation, while removing a step that commonly impedes evaluation progress: a data request for the very information that ComEd made available in the tracking database itself. This level of access and documentation is highly commendable and represents best practice in this area for a Custom program.

The evaluation team worked off of a copy of the tracking system data uploaded by ComEd to their secure SharePoint site on a periodic basis. While working with the database, the most important issue for the evaluation team is consistency of the data.

Peak Demand. The tracking data appears not to be completely populated for peak demand impact (kW). Demand savings were listed as zero kW in 346 out of 887 records. Note that the application form doesn't require the applicant to estimate and provide peak demand impacts. Furthermore, there is evidence from the sample that some peak demand impact estimates that are prepared as part of the custom ex ante impact calculations are not subsequently data entered, leading to another potential source of under-reporting of peak demand savings.

In the impact sample, nine projects had an ex ante peak demand savings estimate of zero. Of those nine projects, five were estimated by ComEd to be zero, three were not estimated but had savings set equal to zero, and for project #7465 the tracking database reports zero peak savings but the supporting program calculations include a positive estimate of peak demand savings. Of these nine projects, the ex post evaluation found positive peak demand savings in four cases.

The preponderance of cases with peak demand set equal to zero may lead to less reliable evaluation-based peak demand estimates (if the zeros are truly missing, not estimated, or not data-entered in some instances). For example, out of the nine records with zero ex ante kW impacts included in the impact sample, the evaluation found four records with non-zero ex-post kW impacts, totaling 160 kW. Due to the inconsistent way in which the kW ex-ante impacts are populated in the tracking database, these additional findings could not be included in the final ex post peak demand savings estimate.

- **Recommendation.** Enhanced efforts are needed to report peak demand savings for all the projects. To provide consistent estimates of peak demand savings, the program should include dedicated fields in the custom application form for the applicant to report peak demand savings. We recommend that the implementers populate the ex ante demand savings variable in the tracking system with non-zero values where appropriate, so that the program does not under-report demand accomplishments

Measure Descriptions. Measure description information is reasonably populated in the tracking system but there is room for improvement in consistently labeling individual measures and recording measure end use. Currently, applications involving more than one measure appear as a single record, and therefore the measure descriptions tend towards a mixture of rough information concerning the measures installed. ComEd should consider tracking modifications that would isolate individual records for each measure installed and achieve greater levels of consistency in reporting variables that describe measures and end uses affected. ComEd did not populate end use consistently, as it is left blank many times, or populated with a value that is inconsistent with the measure description (e.g. “Other” or “Blank”).

- **Recommendation.** ComEd should consider tracking modifications that would isolate individual records for each measure installed and achieve greater levels of consistency in reporting variables that describe measures and end uses affected. ComEd should also populate end-use consistently, as it is left blank many times, or populated with a value that is inconsistent with the measure description (e.g. “Other” or “Blank”). With these improvements in place, it would be possible for either the program staff or the evaluation team to produce measure-based summary statistics and more precisely track program accomplishments.

3.1.2 Gross Program Impact Parameter Estimates

Ex post gross program impacts were developed for this evaluation for the Custom program based on detailed M&V for a selected sample of 32 projects.

Realization Rates for the Custom Program

There are two basic statistical methods for combining individual realization rates from the sample projects into an estimate of verified gross kWh savings for the population when stratified random sampling is used. These two methods are called “separate” and “combined” ratio estimation.¹¹ In the case of a separate ratio estimator, a separate gross kWh savings

¹¹ A full discussion and comparison of separate vs. combined ratio estimation can be found in [Sampling Techniques](#), Cochran, 1977, pp. 164-169.

realization rate is calculated for each stratum and then combined. In the case of a combined ratio estimator, a single gross kWh savings realization rate is calculated directly without first calculating separate realization rates by stratum.

The separate ratio estimation technique was used to estimate verified gross kWh savings for the Custom program. The separate ratio estimation technique follows the steps outlined in the California Evaluation Framework. These steps are matched to the stratified random sampling method that was used to create the sample for the program. The standard error was used to estimate the error bound around the estimate of verified gross kWh. The results are summarized in Table 3-1, Table 3-2, and Table 3-3 below. The realization rate for demand savings is 0.87, while the realization rate for energy is 0.85 which is high for a custom program. This shows that ComEd is continuing to do a good job of estimating gross impacts for Custom energy efficiency projects in the program. In general the implementation team did a very good job of ensuring the all measures are installed and operational. PY3 energy savings realization rate results indicate that the smallest projects (stratum 3) (RR = 1.14) realized a greater proportion of the ex ante claims than the largest (stratum 1) (RR = 0.81) and medium projects (stratum 2) (RR = 0.57). The evaluation team hypothesizes that this may be due to complexity of the large projects in strata 1 and strata 2.

The relative precision at a 90% confidence level for the 32 Custom projects in the gross impact sample is $\pm 16\%$ for the kWh Realization Rate. One factor that contributes to this relatively high precision result is the wide range of PY3 project realization rates that varied from 0 to 2.58. It should be noted that the evaluation plan was designed to achieve 90/8 precision over the cumulative three year evaluation period from PY1 through PY3. No precision targets were set for PY3 alone.

As mentioned previously, the tracking system records for ex ante peak demand impact (kW) were often populated with zeroes in the Custom program population. The estimation of precision around the ex post peak demand realization rate is based on all non-zero kW estimates. This led to less sample-based coverage for demand realization rate estimates in comparison with energy realization rate coverage, especially in stratum 3, but a narrower relative precision estimate than the kWh result. Note that, out of the nine records with zero ex ante kW impacts in the impact sample, the evaluation found four records with non-zero ex-post kW impacts, totaling approximately 160 kW. Due to the inconsistent way in which the kW ex-ante impacts are populated in the tracking database, these additional findings could not be included in the estimation of the program realization rate, and therefore could not be credited to the program.

Strata 1 and 2 of the sample were collapsed for the purpose of calculating realization rates for demand savings so that the standard deviation of the result can be estimated. There can be no standard deviation estimate if the sample comprises only one point, as is the case here for stratum 1. Project #7739, which is one of the two projects in strata 1, has zero demand savings.

Table 3-1. Gross Impact Realization Rate Results for the Selected Custom Sample

Sampled Project ID	Sample-Based Ex Ante kWh Impact Claimed	Sample-Based Ex Ante kW Impact Claimed	Sampling Strata	Ex Ante-Based kWh Gross Impact Weights by Strata	Sample-Based Ex Post Gross kWh Impact	Sample-Based Ex Post Gross kW Impact	Application-Specific Ex Post Gross kWh Realization Rate	Sample-Based Ex Post Gross kWh Realization Rate	Application-Specific Ex Post Gross kW Realization Rate	Sample-Based Ex Post Gross kW Realization Rate
2559	7,637,833	897	1	0.71	5,948,392	645	0.78	0.81	0.72	
7739	3,057,003	0	1	0.29	2,755,759	0	0.90		N/A	
391	2,549,903	0	2	0.20	0	0	0.00	0.57	N/A	0.85
1030	1,433,405	118	2	0.11	1,371,913	210	0.96		1.78	
4036	971,096	121	2	0.07	880,145	102	0.91		0.85	
3820	968,368	133	2	0.07	491,623	75	0.51		0.57	
2996	648,074	74	2	0.05	647,348	74	1.00		1.00	
4367	556,999	64	2	0.04	271,316	65	0.49		1.02	
2412	456,836	0	2	0.03	19,248	2.5*	0.04		N/A	
5311	430,117	64	2	0.03	351,516	64	0.82		1.00	
8359	1,046,272	119	2	0.08	1,043,067	124	1.00		1.03	
4371	1,041,405	113	2	0.08	951,399	107	0.91		0.95	
7461	795,010	47	2	0.06	213,949	48	0.27		1.04	
7339	751,946	75	2	0.06	162,349	24	0.22		0.33	
6997	537,305	51	2	0.04	383,042	45	0.71		0.89	
7465	457,682	0	2	0.04	389,392	62*	0.85		N/A	
8568	413,764	0	2	0.03	691,504	96*	1.67		N/A	
3176	342,665	39	3	0.03	342,060	39	1.00	1.00	0.90	
5804	55,875	0	3	0.00	24,915	0	0.45	N/A		
4081	84,421	10	3	0.01	81,582	9	0.97	0.96		
2234	138,035	5	3	0.01	356,233	9	2.58	1.89		
6215	60,559	0	3	0.00	89,478	0	1.48	N/A		
5186	3,889	0	3	0.00	3,889	0	1.00	1.00		
3554	94,669	16	3	0.01	84,455	12	0.89	0.77		
5613	10,793	3	3	0.00	3,912	2	0.36	0.60		
6011	360	0	3	0.00	360	0.1*	1.00	N/A		
5872	109,799	16	3	0.01	113,107	17	1.03	1.05		
7109	25,097	0	3	0.00	14,266	0	0.57	N/A		
8210	132,867	20	3	0.01	126,922	17	0.96	0.84		
8557	14,235	2	3	0.00	1,480	1	0.10	0.53		
8569	710	0	3	0.00	1,077	0	1.52	0.00		
3454	138,299	112	3	0.01	142,408	94	1.03	0.84		
TOTAL	24,965,290	2,096	-	-	17,958,106	1,784	-	0.85	-	0.87

* Within the impact sample we found four projects with 160 kW total ex post kW savings, but zero ex ante kW savings. These observations could not be used to estimate a kW realization rate, and also could not be applied to the program population using a ratio estimation approach.

Table 3-2. Gross kWh Realization Rates and Relative Precision at 90% Confidence Level

Stratum	Relative Precision	Low	Mean	High
	± %			
Stratum 1	0%	0.81	0.81	0.81
Stratum 2	28%	0.41	0.57	0.73
Stratum 3	26%	0.84	1.14	1.44
Total kWh RR	16%	0.72	0.85	0.99

Table 3-3. Gross kW Realization Rates and Relative Precision at 90% Confidence Level

Stratum	Relative Precision	Low	Mean*	High
	± %			
Stratum 1	12%	0.74	0.85	0.95
Stratum 2				
Stratum 3	8%	0.83	0.90	0.98
Total kW RR	7%	0.81	0.87	0.94

3.1.3 Gross Program Impact Results

Based on the gross impact parameter estimates described previously, gross program impacts were derived for the PY3 Custom program. The results are provided in Table 3-4.

Table 3-4. Gross Parameter and Savings Estimates

Sampling Strata	kWh, Ex Ante	kWh, Ex Post	kWh RR	kW, Ex Ante	kW, Ex Post	kW RR
1	10,694,836	8,704,151	0.81	897	758	0.85
2	22,036,229	12,630,862	0.57	2,031	1,717	
3	22,824,213	26,097,800	1.14	2,865	2,585	0.90
Total	55,555,278	47,432,812	0.85	5,794	5,060	0.87

The evaluation team has provided to ComEd site-specific M&V reports for each Custom gross impact sample point. These site-specific impact evaluation reports summarize the ex ante savings in the Final Application submitted, the ex post M&V plan, the data collected at the site, and all of the calculations and parameters used to estimate savings.

Some general observations from the gross impact sample:

- For projects #4036, #5613, #8557 and #7465, the ex ante hours of operation differed substantially from the ex post findings (which were based on on-site verification and metered data), which reduced the kWh realization rates. For project #5311, the bifurcation of emergency fixtures' hours of operation was not made in the ex ante calculations, which along with different ex ante and ex post facility hours of operation resulted in a reduced kWh realization rate.
- For outdoor lighting projects #8569 and #6215, the ex ante assumed hours were adjusted based on ex post verified operating conditions. This adjustment significantly increased the total realized savings (#8569 RR = 152%, #6215 RR = 148%) for these projects. However, the demand savings for project #6215 and #8569 were reduced to zero due to the fact that the lights do not operate during peak hours.
- In some cases, the ex ante reported operating conditions were found to be different than actual ex post verified conditions. For projects #4367 and #2412, the ex ante assumed operating conditions were different from the ex post verified operating conditions which reduced the total realized savings. For projects #2234 and #3554 the ex ante assumed operating conditions were different from the ex post verified operating conditions and resulted in an increase in the total realized savings.
- Ex ante selected baseline conditions for projects #391, #3820, #4081 and #2234 were adjusted consistent with the evaluation baseline selection approach. The adjusted baseline condition significantly reduced savings for two (#391 and #3820) of the four projects. The baseline equipment selected by the program in both cases was the existing system, but was found to be very old and in need of replacement.
- For projects with baseline issues, the most common problem observed is the use of pre-existing (often referred to as "in situ") equipment as the baseline for estimating program savings and incentives. In many cases, savings were calculated relative to an in situ baseline and then assumed to occur over the entire period of the effective useful life (EUL) of the new equipment. This assumption would only be justifiable in situations where the program induced an early replacement of equipment and for cases where the equipment has a very high probability of continuing in operation for a predominant portion of the EUL of the new equipment. Instead, in some cases it was found that the existing equipment had a relatively short remaining useful life or generally required replacement, which means that the program should have treated the project as replacement-burnout, not early retirement.
- Ex ante calculations did not normalize savings to account for differences between the post retrofit conditions and pre retrofit conditions. For project #6997 and #7339, the ex

ante measured pre retrofit airflow profile was different from the post retrofit airflow profile. However, ex ante savings calculations did not normalize savings for post retrofit conditions. For project #4371, the measured pre retrofit period production levels were different from the measured post retrofit period production levels as shown in program documents. Ex ante calculations did not normalize the energy usage estimates and thereby report representative savings for a given annual production level.

- A spreadsheet cell reference error in the ex ante baseline calculations for project # 7461 resulted in higher savings than appropriate, producing a much lower realization rate (than would have been if the reference error were absent). Also, a similar cell reference error was observed for project #391 that reduced the total reported ex ante savings.
- For project #7109, ex ante savings estimated a reduction in cooling energy that was not re-calibrated for typical operation. The ex ante calculation energy savings reduction factor of 19% was assumed based on manufacturer’s literature claims, which state that energy savings can range between 4% and 23% of the total HVAC energy usage. The ex ante savings were stated to be conservative which was not the case as the reported savings were close to the upper bound of that range. At a minimum, simple engineering models should be developed to estimate savings for small projects or to verify the accuracy of manufacturer claims.
- The power factor (PF) values estimated in the ex ante calculations for project #3554 and #2559 were revised in the ex post calculations based on the data collected from the motor or equipment nameplates and confirmed with the manufacturers.
- For VSD and controls projects (#2234, #5804 and #7461), it was found that the control strategies were not accurately modeled in the ex ante calculations.
- The peak kW calculations were not always consistent with PJM requirements or were not representative of the actual operation of the system during the peak period (e.g. # 6215, #3554 and #8568).
- There were program projects where incremental or project cost was not accurately reported. Additionally, the electric unit cost (\$/kWh) varied considerably across projects. Since these factors are important inputs to estimating payback, and since payback is a project eligibility screening criteria, greater care is needed in reporting such figures, including the provision of verification sources.
- In summary, estimates should be based upon appropriate representation of installed equipment operation, baseline condition, peak demand period, accurate estimation of equipment operating hours, normalization of equipment operating profiles or production, and careful application of assumptions made when estimating energy savings.

3.1.4 Net Program Impact Parameter Estimates

The separate ratio estimation technique was used to estimate Net-to-Gross (NTG) Ratios for the Custom program. The separate ratio estimation technique follows the steps outlined in the California Evaluation Framework. These steps are matched to the stratified random sampling method that was used to create the sample for the program. The standard error was used to estimate the error bound around the estimate of verified NTG Ratio. The stratum and program level NTG Ratios, along with precision estimates, are shown in Table 3-5 (kWh impacts) and in Table 3-6 (kW impacts).

A quantification of spillover was not included in the calculation of NTG ratio for PY3. However spillover effects were examined in this evaluation and their magnitude was found to be quite small as discussed below.

Once gross and NTG program impacts have been estimated, net program impacts are calculated by multiplying the gross impact estimate by the program NTG ratio.

Table 3-5. kWh NTG Ratio and Relative Precision at 90% Confidence Level

Sampling Strata	Relative Precision			
	± %	Low	Mean	High
1	0%	0.18	0.18	0.18
2	15%	0.59	0.69	0.79
3	10%	0.56	0.62	0.68
1, 2, 3 (All)	9%	0.51	0.56	0.61

Table 3-6. kW NTG Ratio and Relative Precision at 90% Confidence Level

Sampling Strata	Relative Precision			
	± %	Low	Mean	High
1	38%	0.23	0.36	0.50
2				
3	15%	0.47	0.55	0.63
1, 2, 3 (All)	18%	0.38	0.46	0.54

The measured Year 3 NTG ratio of 0.56 was lower than in PY2 (0.76), meaning free-ridership was higher. Significant free-ridership (above 40%) was found in 26 out of 67 evaluated projects, of which only seven had a resulting NTG ratio below 0.30. Two large projects from strata 1 with

substantial free-ridership had very low Program Influence¹² and No-Program¹³ scores resulting in the NTG ratio of 0.16 (#2559) and 0.25 (#7739). The other five projects with substantial free-ridership all had zero scores as No-Program scores (on a scale of 0 to 10).

Projects with the lowest Program Components¹⁴ scores tend to have lower NTG ratios, while those with higher Program Component scores have NTG ratios that are among the highest. For example, all projects with Program Components scores of 7 or lower have NTG ratios that are somewhat low, below 0.7. The average NTG ratio across all of these projects is 0.38. In contrast, the mean NTG ratio in the group with a Program Components score of 9 or greater is 0.76.

Relatively high and relatively low NTG scores in the sample are not directly affected to the same extent by the Program Influence score. That is, the correlation between the Program Influence score and resulting NTG is not as significant as is the correlation with the No-Program and Program Components scores.

Program influence was low for a number of different reasons. In some cases, participants report that program implementers arrived late in the decision making process and offered incentives for projects that had already been decided upon. We also found several cases where the customer reported that they would have installed the same equipment at the same time in the absence of the program incentives. The evidence also indicates that program claims were made for projects that customers initiated for non-energy savings reasons and for which no alternative was ever considered.

Spillover

Spillover effects were addressed qualitatively in the PY3 evaluation, based on responses to a battery of spillover questions in the phone survey. The evidence of spillover for the Custom program is presented in Table 3-7 below.

¹² A Program Influence score reflects the degree of influence the program had on the customer's decision to install the specified measures.

¹³ A No-Program score captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available.

¹⁴ A Program Components score reflects the importance of various program and program-related elements in the customer's decision and timing of the decision in selecting specific program measures.

Table 3-7. Evidence of Spillover in PY3

Spillover Question	Evidence of Spillover
<p>Since your participation in the ComEd program, did you implement any additional energy efficiency measures at this facility that did NOT receive incentives through any utility or government program?</p>	<p>Of the 64 surveyed customers that responded to this question, 26 said “Yes” (41%). These 26 respondents implemented a total of 36 energy efficiency measures. Two respondents were unable to elaborate surrounding the measure installed.</p>
<p>What type of energy efficiency measure was installed without an incentive?</p>	<p>(11) Lighting Measures (5 LED lamps, 2 T-5 lamps, 1 CFL, 1 emergency lighting, 1 LED traffic signal, 1 low wattage metal halide lamps) (8) HVAC measures (2 Boiler economizers, 2 VFDs on HVAC motors, 1 programmable thermostat, 2 Unitary/Split AC Systems, 1 Boilers) (4) Lighting Controls (2 occupancy sensors, 1 time clock on lighting) (3) Energy Management System/Building Automation System/Intelligent power distribution system (2) Blast fan motor for process freezer (1) Motor (1) Pump (1) Large ceiling fan (1) Cooler (1) Oven (affecting gas consumption) (1) Improve the oxidizer (1) Water reduction program (1) Ammonia refrigeration system</p>
<p>On a scale of 0 to 10, where 0 means “not at all significant” and 10 means “extremely significant,” how significant was your experience in the ComEd program in your decision to implement this energy efficiency measures?</p>	<p>For the 36 implemented measures: (19) Rating between 0 and 3 (7) Rating between 4 and 6 (5) Rating between 7 and 10 (5) Refused/Don’t know</p>
<p>If you had not participated in the ComEd program, how likely is it that your organization would still have implemented this measure? Use a 0 to 10, scale where 0 means you definitely would NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure?</p>	<p>For the 36 implemented measures: (3) Rating between 0 and 3 (5) Rating between 4 and 6 (22) Rating between 7 and 10 (6) Refused/Don’t know</p>

Spillover Question	Evidence of Spillover
Why did you purchase this energy efficiency measure without the financial assistance available through the ComEd’s program?	For the 36 implemented measures: (12) No program offers this measure/gas measure (10) Rebate too small/Wasn’t worth the time (4) Project was too small (2) Not enough time/needed measure ASAP (2) “We didn’t qualify” (6) Don’t know

These findings suggest that spillover effects for PY3 are relatively small. While participating customers are installing other energy efficiency improvements outside of the program, they attribute little influence to the program in their decision to install these additional measures and further state that these actions generally would have been implemented regardless of their program participation experiences. In addition, the respondents indicated that they did not pursue rebates through the ComEd program due to the lack of a program offering for the measure they installed or that the rebate amount was too small to spend their time on the application process. The evaluation team will likely collect spillover data in this same manner for the PY4 evaluation. The decision to conduct additional evaluation activities to quantify spillover in PY4 will be examined as part of the evaluation planning effort.

3.1.5 Net Program Impact Results

Net program impacts were derived by multiplying gross program savings by the estimated NTG ratio. Table 3-8 and Table 3-9 provide the program-level evaluation-adjusted net impact results for the PY3 Custom program. The NTG ratio for energy savings is 0.56 and for demand savings is 0.46, and is based upon responses from each contributing participant in the sample (and other sources) and the use of kWh-based weights. The chained realization rate (gross RR * NTG Ratio) is 0.48 for kWh and 0.40 for kW.

Table 3-8. Program-Level Evaluation-Adjusted Net kWh Impacts for PY3

Sampling Strata	Ex Ante Gross kWh	Ex Post Gross kWh	kWh RR	Ex Post Net kWh	NTGR (ex post gross)
1	10,694,836	8,704,151	0.81	1,606,223	0.18
2	22,036,229	12,630,862	0.57	8,708,567	0.69
3	22,824,213	26,097,800	1.14	16,119,675	0.62
Total	55,555,278	47,432,812	0.85	26,434,465	0.56

Table 3-9. Program-Level Evaluation-Adjusted Net kW Impacts for PY3

Sampling Strata	Ex Ante Gross kW	Ex Post Gross kW	kW RR	Ex Post Net kW	NTGR (ex post gross)
1	897	758	0.85	275	0.36
2	2,031	1,717		622	
3	2,865	2,585	0.90	1,427	0.55
Total	5,794	5,060	0.87	2,324	0.46

3.2 Process Evaluation Results

The process component of the Smart Ideas for Your Business Custom program evaluation focused on program participation, program design and implementation, the trade ally network, marketing and outreach, barriers to participation, and participant satisfaction. The primary data sources for the process evaluation included the telephone survey with 61 program participants, the survey with 70 non-participants, and the in-depth interviews with market actors and Account Managers. Please refer to Section **Error! Reference source not found.** for more information on the primary research conducted in support of this evaluation.

3.2.1 Participant Profile

PY3 Participation by Sector

In PY3, 222 companies completed a total of 884 custom projects that accounted for 55,555,278 kWh and 5,794 KW of ex ante gross savings.¹⁵ PY3 participants represent a range of business sectors. Key observations, by business sector, are:

- Heavy industry accounts for the highest share of energy savings (26%) and demand savings (32%). However, this sector represents only 4% of all projects and 13% of all participants. It is therefore not surprising that heavy industry has the highest kWh per project which is largely driven by one large project that received over \$500,000 in ComEd incentives in PY3.
- The retail/service sector represents the highest share of both projects (79%) and participants (25%), resulting in the highest number of projects per participant (12.6) – this is driven by the high involvement of chain companies. Four retail chains completed more than 45 projects in the Custom program, with two completing more than 200

¹⁵ Gross savings reported in this section are based on the program tracking database.

projects each. However, the average energy savings per project are the smallest of any sector (16,437 kWh).

Table 3-10 summarizes the distribution of PY3 participants, projects, and energy and demand savings by business sector.

Table 3-10. Participants, Projects, and Ex Ante Savings by Business Sector

Sector	Projects		Participants		Project/ Part.	Ex Ante Gross Energy Savings		kWh/ Project	Ex Ante Demand Savings	
	#	%	#	%		kWh	%		kW	%
Heavy Industry	38	4%	29	13%	1.3	20,057,559	36%	527,831	1,867	32%
Retail/Service	694	79%	55	25%	12.6	11,407,017	21%	16,437	1,491	26%
Office	31	4%	30	14%	1.0	6,810,598	12%	219,697	401	7%
Light Industry	41	5%	39	18%	1.1	6,598,719	12%	160,944	792	14%
Medical	10	1%	9	4%	1.1	2,156,535	4%	215,654	219	4%
Warehouse	16	2%	13	6%	1.2	1,348,254	2%	84,266	270	5%
Hotel / Motel	5	1%	4	2%	1.3	1,032,505	2%	206,501	143	2%
Grocery	7	1%	7	3%	1.0	400,343	1%	57,192	52	1%
Restaurant	17	2%	16	7%	1.1	298,130	1%	17,537	58	1%
School/College	2	0%	2	1%	1.0	65,705	0%	32,853	1	0%
Miscellaneous	23	3%	18	8%	1.3	5,379,912	10%	233,909	499	9%
TOTAL	884	100%	222	100%	4.0	55,555,278	100%	62,845	5,794	100%

Source: Program Tracking Database.

Participation Trends by Sector

Program participation increased substantially compared to PY2, from 340 projects completed by 110 companies to 884 projects completed by 222 companies. The average size of PY3 projects (62,845 kWh) remained relatively stable compared to PY2 (78,839 kWh). Notably, thirteen percent of surveyed Custom Program participants reported that the scope of their project was limited by the incentive cap.

Ex ante energy savings more than doubled from 26.8 GWh to 55.6 GWh, while ex ante demand savings increased from 2,910 kW to 5,794 kW. These increases are expected, as the goals and budgets greatly increased in PY3, and the program was not limited by oversubscription. Additionally, program staff noted that the increased outreach was paramount in bringing in more Custom projects, especially in industrial process work and compressed air upgrades.

Key participation characteristics include:

- The increase in participation from the heavy industry had the largest impact on overall program savings; energy savings doubled from heavy industry from PY2 to PY3.
- The retail/service sector had the largest increase in the number of projects and participants generating 21% of all PY3 energy savings.
- Lodging, medical, and Schools/colleges still have relatively stagnant growth. Such hard to reach industries might benefit from specialized program offerings.

The figures below compare the number of projects, participants, and ex ante energy and demand savings by business sector and program year.

Figure 3-1. Projects by Business Sector and Program Year

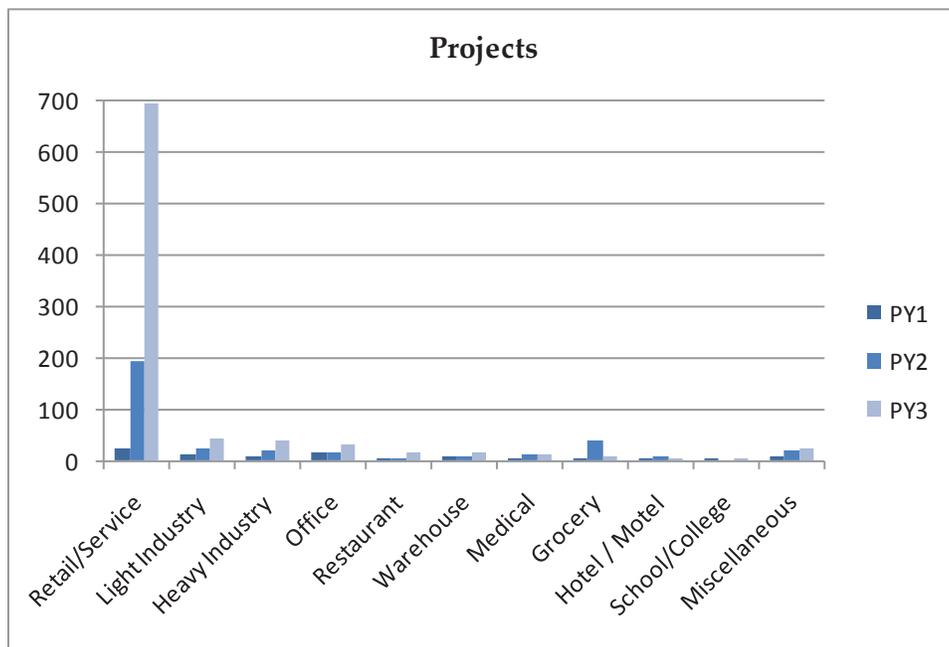


Figure 3-2. Participants by Business Sector and Program Year

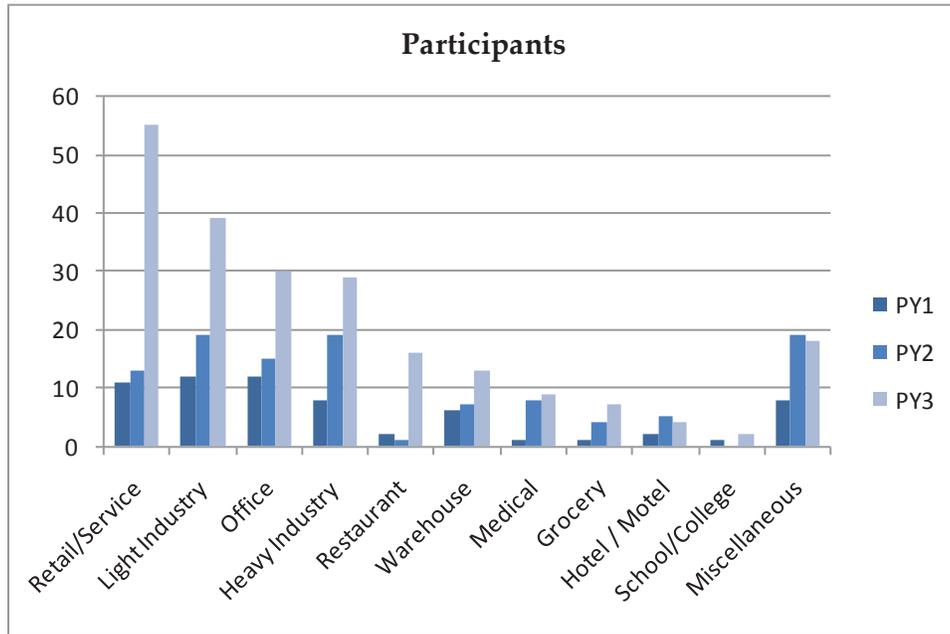


Figure 3-3. Energy Savings by Business Sector and Program Year

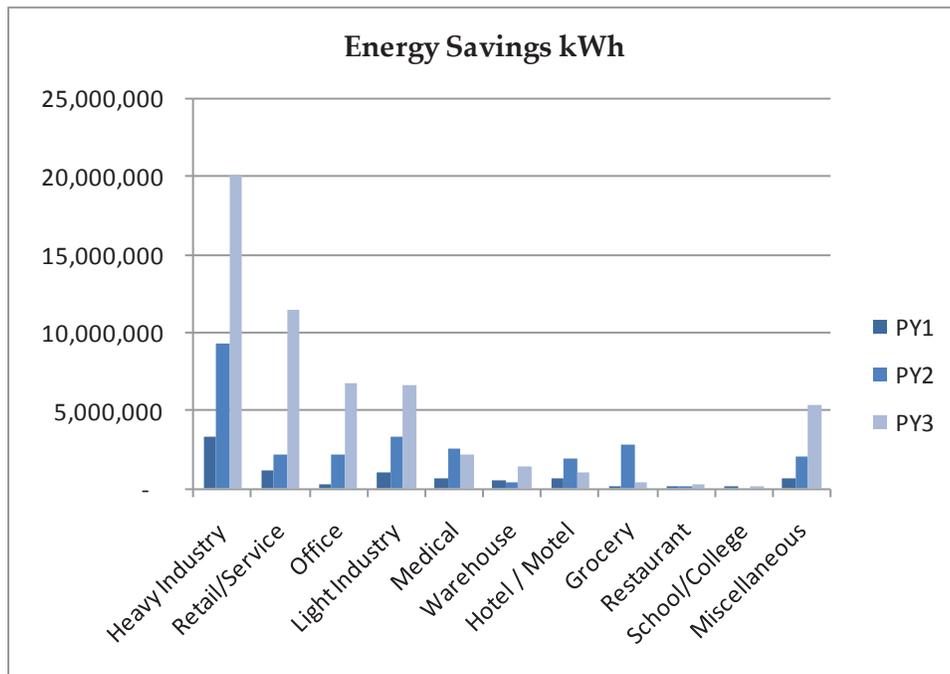


Figure 3-4. Demand Savings by Business Sector and Program Year

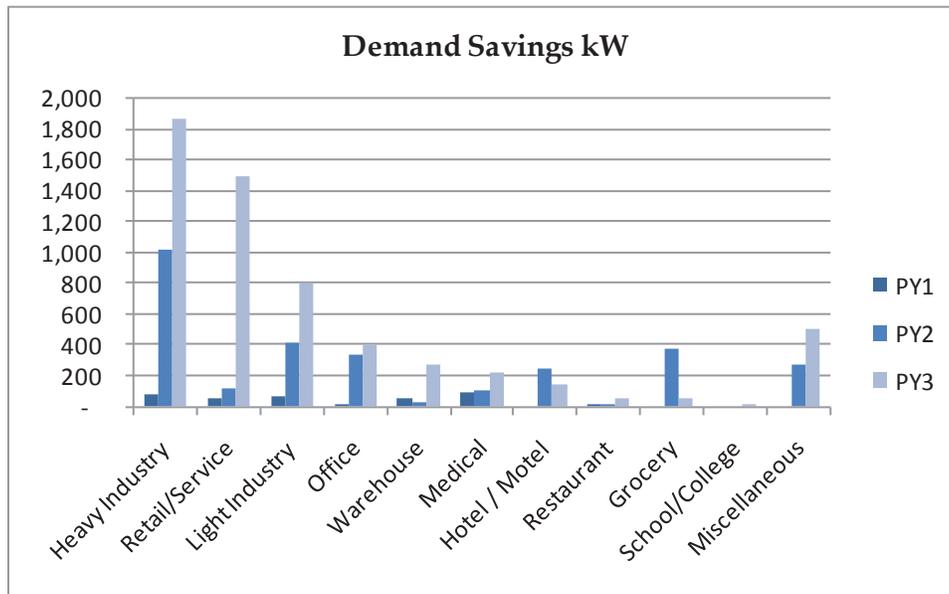
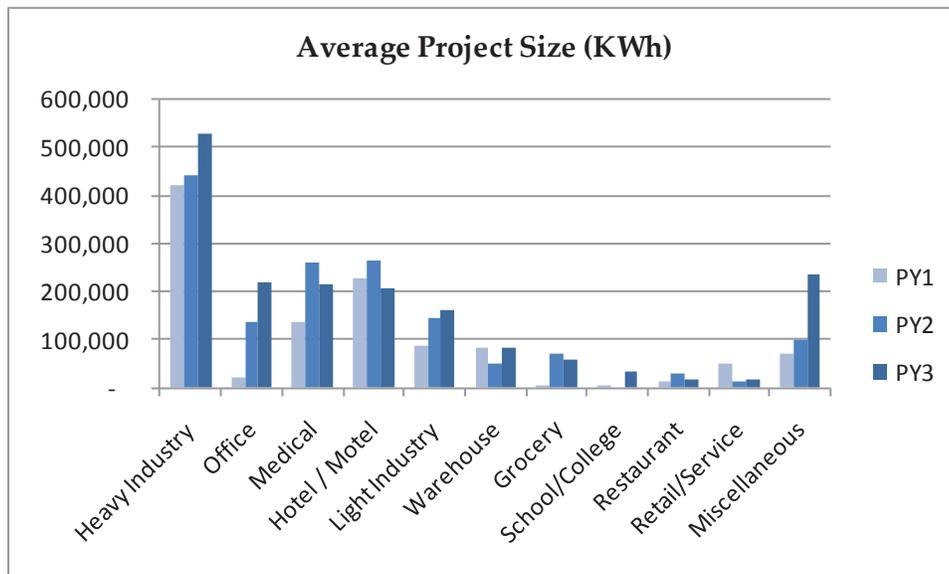


Figure 3-5. Average Project Size by Business Sector and Program Year



Source: PY3 Program Tracking Database.

3.2.2 Program Design and Implementation

ComEd's Smart Ideas for Your Business Custom Program offers incentives designed to encourage implementation of energy-efficiency measures. The Custom Program offers incentives for those eligible improvements that are not included in the prescriptive measure list. The participation process for the Custom Program did not change in PY3. Program staff did indicate, however, that the product mix is changing – more lighting measures were moved from the Custom Program to the standard Prescriptive Program.

Application Process

The application process did not change compared to PY2. All projects have to submit a pre-approval application as well as a final application. Program guidelines stipulate that projects must be completed within 90 days of pre-approval; however, many projects apply for and are granted an extension.

A majority of participants filled out either the initial or final program paperwork themselves (66%). Of these participants, most feel that the application forms clearly explain the program requirements and participation process (90%) and rate the application process as easy (70%).¹⁶ When participants do not fill out the pre-approval and final applications themselves, this is most often done by a contractor (43%).

However, some participating contractors think that the Custom Program application is still rather onerous and time-consuming. As part of recommendations on how to improve the program, many cited that a streamlined application would be beneficial, and that some measures that still fall under the Custom Program should be considered a Prescriptive measure. As one contractor explained:

“The EMS or the controls that I file for come under the custom program, which is quite complicated to file. Some utilities have this as a prescriptive program; I’m talking about energy management systems; and that might be something to consider just to make it a bit easier.”

Customer Service

The Smart Ideas for Your Business Program employs the KEMA call center to field questions from program participants. ComEd's call center forwards questions from program participants to the KEMA call center. Only 25% percent of PY3 participants report having called the call center during the participation process. Almost all of the customers who contacted the call center were satisfied with the call center's ability to answer questions.

¹⁶ A score of 7 or higher on a scale from 0 to 10, where 0 is “very difficult” and 10 is “very easy.”

Account Managers

In PY2, program staff began to more actively engage ComEd Account Managers. The program developed a toolkit for Account Managers and also began providing training opportunities and "Lunch and Learns." In PY3, program staff continued to work to improve the relationship between Account Managers and the Smart Ideas Program. Given their pre-existing relationship with customers who are the largest users of energy, the main goal for PY3 was to *"provide them with better tools to sell the program."* Program staff has simplified the "tool-kit" as they found that Account Managers were not using it. The addition of more KEMA outreach staff has allowed Account Managers to now have one point of contact for all questions pertaining to the program in an effort to increase communication and provide greater outreach support.

Additionally, PY3 marked the introduction of Smart Ideas goals for Account Managers. PY3 goals included recruiting customers to attend the Energy Efficiency Expo and attending "Lunch and Learns."¹⁷ All interviewed Account Managers were generally receptive to the introduction these goals; they thought the goals were both realistic and achievable. As one Account Manager noted: *"I think the goals were realistic. It's good for us to support our company goal. So it's good that we have a stake in supporting our company's goals"*. However, three of the five did note that continuing to recruit customers to the Energy Efficiency Expo will become increasingly difficult, unless the Expo offers something new to entice customers to return again.

The Account Managers also agreed that the "Lunch and Learns" were very successful and helpful in providing information about the program. One Account Manager specifically mentioned that the "Lunch and Learns" were especially valuable when other Account Managers discussed different approaches that have been successful in promoting the program to their customers. Interviewed Account Managers feel that, overall, they have enough knowledge of the program to effectively promote it and assist their customers through the participation process. Given that all five Account Managers consider themselves very knowledgeable about the program, it is not surprising that all of them promote the program to their customers quite frequently.

Overall, 79% of PY3 Custom projects were associated with customers who have an Account Manager. Program participants report the following involvement of Account Managers during PY3:¹⁸

- Thirty-three percent of participants with an Account Manager first heard about the Smart Ideas program from their Account Manager.

¹⁷ In early PY3, an additional savings goal for Account Managers was contemplated but ultimately not implemented.

¹⁸ It should be noted that of the 61 interviewed participants, 25 gave information about having or not having an Account Manager that contradicts information in the participant tracking database.

- Sixty percent of participants with an Account Manager discussed the program with their Account Manager.
- Thirty percent of participants with an Account Manager indicate that their Account Manager assisted with the project implemented through the Custom Program.

In general, despite efforts to better engage Account Managers, program staff noted that there is still large variability in the efforts of Account Managers and that they are still trying to strengthen their relationship with the Account Managers.

3.2.3 ComEd Trade Ally Network

Trade allies, i.e., contractors and other market actors registered with the Smart Ideas Program, continue to be an important part of the Custom Program. In PY3, in order to remain a trade ally a contractor¹⁹ had to complete one project through the program and attend a basic training. These new requirements were initiated as program staff shifted their focus from the quantity of trade allies to the quality of the applications (i.e., projects) submitted. While the total number of trade allies did not go down as a result of the new requirements, PY3 trade allies are generally more active compared to PY2 ones, as about 75 to 100 of the least active PY2 trade allies were dropped at the end of the program year. Program staff also noticed an improvement in the quality of applications received in PY3.

Eight of fifteen contractors interviewed for this evaluation are trade allies. Only five of the eight trade allies were aware of the new requirements for becoming a trade ally. Trade allies generally did not report a change in their business practices as a result of their trade ally designation. However, two did indicate a change in their marketing as a result of their participation in the trade ally network. When asked about the main benefits of becoming a trade ally, increased credibility in the eyes of the customer and use of branded marketing materials were frequently cited.

“I just think that in an area like Chicago, or any other part of the country, that your power company is one of your most recognizable brand names that are out there. And if somebody wants to decide whether or not they want to trust you, if you’re good enough to be working with the power company, you’re probably good enough for them.”

Seven of the interviewed contractors participated in the Custom Program in PY3 but they are not trade allies. Reasons for not becoming a ComEd trade ally range from lack of knowledge of the new requirements to difficulty attending the training because of their distance from the training locations. Most interviewed non-trade allies were not aware of the benefits of becoming

¹⁹ Most of the Smart Ideas trade allies are contractors. However, in some cases, other market actors assist customers in implementing Smart Ideas projects, including consultants, engineers, suppliers, and manufacturers.

a registered ally; two cited trust and having their company name on the website as the perceived benefits.

Based on the Custom Program database, 111 unique contractors submitted an application in PY3, up from 71 in PY2 and 44 in PY1. Of the 111 PY3 contractors, 47 were trade allies. Overall, 66% of all Custom projects (584) were implemented with the support of a contractor, 440 by a trade ally. Most of the contractors involved in custom projects (64%) implemented a single project in PY3, while nine contractors (8%) completed ten or more projects (seven of the nine are trade allies). However, the nine contractors that completed ten or more projects accounted for 70% of all contractor projects. Notably, two contractors, both trade allies, completed over 100 projects each. However, all of these projects were for a single retail chain company.

Table 3-11. PY3 Contractor Projects

Contractors with...	Custom Projects		
	Number of Contractors	Percent of Contractors (n=111)	Percent of Contractor Projects (n=584)
1 project	71	64%	12%
2 projects	14	13%	5%
3 projects	8	7%	4%
4-9 projects	9	8%	9%
10+ projects	9	8%	70%

Source: Program Tracking Database.

The telephone survey with program participants included questions about their use of contractors, their contractors' affiliation with the ComEd Trade Ally Network, and their satisfaction with their contractors. Eighty-five percent of interviewed participants report having used a contractor to complete the project. Responses to the survey show that contractors continue to play an integral role in the implementation of custom projects. Additionally, contractors are becoming more active promoters of the Smart Ideas program. However, many participants still do not believe that it is important that the contractor is a ComEd trade ally. Specific findings from the participant survey include:

Participants in the Custom Program are satisfied with their contractors: Almost all interviewed program participants (96%) who used a contractor to install their project report that their contractor met their needs (a score of 7 or higher on a scale from 0 to 10). Ninety-four percent of participants would recommend their contractor to others.

Participants discuss the program with their contractor: 82% of custom participants report having discussed the Custom Program with a contractor or trade ally.

Contractors are more actively promoting the program: 20% of custom participants first heard about the program through a contractor, significantly more than in PY2 when only 7% of participants cited a contractor as their source of program information.

Contractors play an important role in designing or specifying the installed equipment: 41% of participants report that a contractor, consultant, or engineer provided the most assistance in the design or specification of the equipment installed through the Smart Ideas program.

Participants do not believe it is important for their contractor to be a ComEd trade ally: Although significantly more custom participants indicate that their contractor is affiliated with the program (31% as compared to only 15% in PY2), still 37% do not know if their contractor is a trade ally. Thirty percent of custom participants believe that when implementing an energy efficiency project it is not at all important (a score of 0 on a scale from 0 to 10) to use a contractor that is affiliated with the Smart Ideas for Your Business Program.

Similar to participants, non-participants most often look towards contractors (43%) for information and guidance when purchasing new equipment.²⁰

Of the nine contractors who completed ten or more custom projects, eight also completed projects that received incentives from the Prescriptive program. These active contractors clearly have a large market presence and are involved in projects supported by both the Custom Program and the Prescriptive Program. In PY2 only 28% of contractors involved in a custom project in PY2 also completed a project for the Prescriptive Program. However, in PY3 most Custom contractors also worked on projects through the Prescriptive Program (63%).

Most interviewed contractors indicated that the Smart Ideas for Your Business Program influenced their business. While many of these contractors had already adopted business models that focused on energy efficiency and were recommending energy efficient equipment before participating in the program,²¹ most (8 of 15) believe that the program was influential in increasing their overall sales. Additionally, five contractors changed their marketing practices, and two trade allies report that they hired additional staff due to their participation in the Smart Ideas program.

²⁰ Note that the research with non-participants excluded customers with demand of <100 kW (delivery service class C28). As such, any non-participant findings presented in this report only represents customers with demand of 100 kW or more.

²¹ It should be noted that while the respondents considered the recommended equipment energy efficient, it is unknown if the equipment would have met the efficiency standards of the Smart Ideas Program.

Trade Ally Bonus

PY3 also marked the introduction of a trade ally bonus. The bonus was in effect from September 1st through November 30th, 2010 (the day by which final applications had to be submitted). It was only available to registered trade allies and consisted of 5% of the total incentive amount for projects with incentives of \$10,000 or more. The trade ally bonus was designed to encourage implementation of larger projects. However, program staff believes that the main outcome was to clear the project pipeline more quickly, rather than to generate additional large projects.

Knowledge of the trade ally bonus offering in PY3 was not widespread amongst interviewed contractors. Only five of the eight interviewed trade allies and none of the interviewed non-trade ally contractors were aware of the bonus. However, some of these non-trade ally contractors expressed interest in the bonus offering and indicated that they would have increased promotion of the program had they been aware of the offering. These responses indicate that trade ally bonuses have the potential to increase promotion of the program and also provide a reason for more contractors to register as a trade ally.

In order to inform potential changes to the trade ally bonus offering, the evaluation team conducted in-depth telephone interviews with utility program managers who oversee programs with similar contractor bonus offerings across the country. These programs varied in both incentive size and savings targets. Two of the most relevant structures for encouraging greater trade ally activity and larger C&I projects were implemented by two utilities in the Midwest and the Northeast, respectively:

- The Midwest utility has a C&I electric trade ally bonus structure that is based on two tiers: Tier 1 trade allies are those who have implemented projects with combined savings of at least one million kWh in the previous program year. They are eligible for a bonus equal to 10% of the customer incentive, for all savings above one million kWh. Tier 2 trade allies are eligible for a bonus of between \$500 and \$4,000, depending on the amount of savings they achieve in the program year. This is a significant change from the previous program year, when both Tier 1 and Tier 2 trade allies were eligible for a flat \$2,500 incentive per project. The utility made the change after determining that the previous incentives were not spurring as many projects as anticipated. In addition, the incentives were not offered for the full program year and had a number of requirements which were somewhat difficult to communicate to trade allies. The new structure was designed to be more straightforward and predictable for trade allies.
- The Northeast utility also has a bonus based on savings. Once a project reaches 500,000 kWh savings, trade allies are eligible to receive one cent per kilowatt hour saved. This was recently increased from a half cent incentive in July 2011, which was found to be too small to encourage the implementation of larger projects.

Other utility program managers had several pieces of advice for any utility looking to start a trade ally bonus program. Several mentioned the need for clear communication and setting expectations at the beginning of the bonus offering. This minimized trade ally confusion and let them set realistic goals. Further, face-to-face communication, as well as frequent contact, was mentioned. Finally, clear deadlines for when an incentive period would start and end increased trade ally confidence and gave them a measure of budgetary stability. Program managers believed that strong bonds between their program and trade allies increased the likelihood that new and larger projects would be generated.

3.2.4 Program Marketing and Outreach

In the first two program years, the Smart Ideas program experienced oversubscription relatively early in the program year, stymieing any program marketing efforts. However, with an increased budget and goals the marketing and outreach plans changed substantially for PY3. As a result, the marketing and outreach staff increased from one dedicated staff person to five by the end of the program year.

The marketing plan for PY3 included trigger tactics that were initiated throughout the program year. These tactics included increased outreach to targeted customer groups such as trade associations and customers who attended the Energy Efficiency Expo. Program staff also followed up on leads from PY1 and PY2 by checking in on those that submitted applications but cancelled their projects. The frequency with which staff sent the electronic newsletter increased from quarterly to six times a year in PY3. Additionally, program staff implemented a direct mailing, sending program information to approximately 5,000 of their larger customers. However, program staff noted that the mailing was largely ineffective because their database contains billing addresses and is not meant as a marketing database.

As a result of the increased marketing, almost half (49%) of Custom participants recall having been directly contacted by ComEd or KEMA. Other findings from the participant survey include:

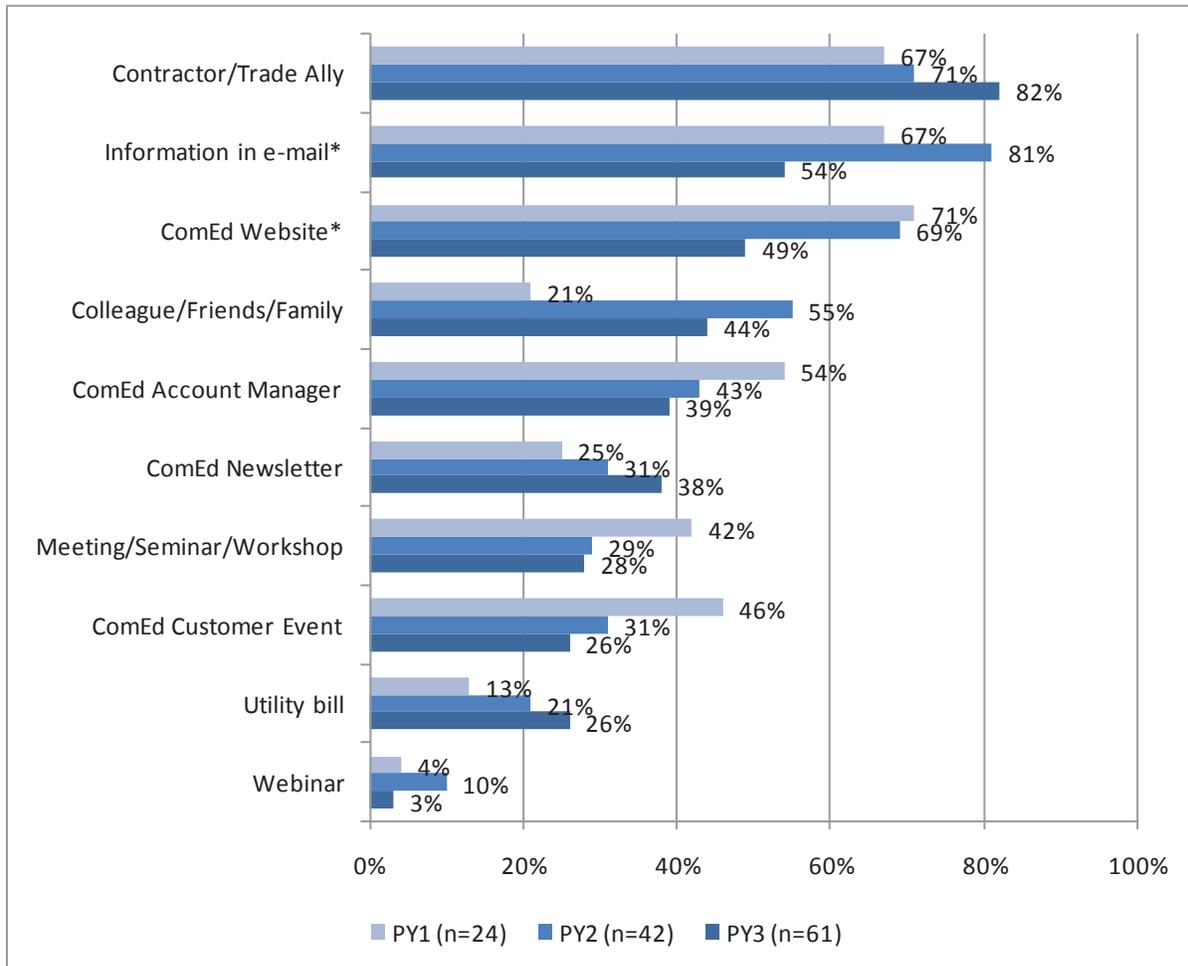
Contractors are the greatest source of program awareness in PY3; 82% indicate that they have discussed the program with a contractor or trade ally.

Despite the increase in frequency with which program emails were sent out, significantly fewer participants in PY3 recall having received program information in an email (67% vs. 81% in PY2). However, email still is an integral component to marketing and outreach as it is preferred by almost half of participants (see below).

Fewer participants visit the ComEd website for program information than in PY2 (49% vs. 69%)

Figure 3-6 summarizes participant responses about program information sources.

Figure 3-6. Sources of Program Information (Prompted)



Note: * Denotes a significant difference between PY2 and PY3 at the 90% confidence level.
 Source: PY1, PY2, and PY3 CATI Participant Surveys.

Most participants (80%) found the marketing materials to be useful²² and significantly more participants found the materials *very* useful than in PY2 (31% vs. 17%, respectively). Only a few participants noted that the program materials could have more detailed information.

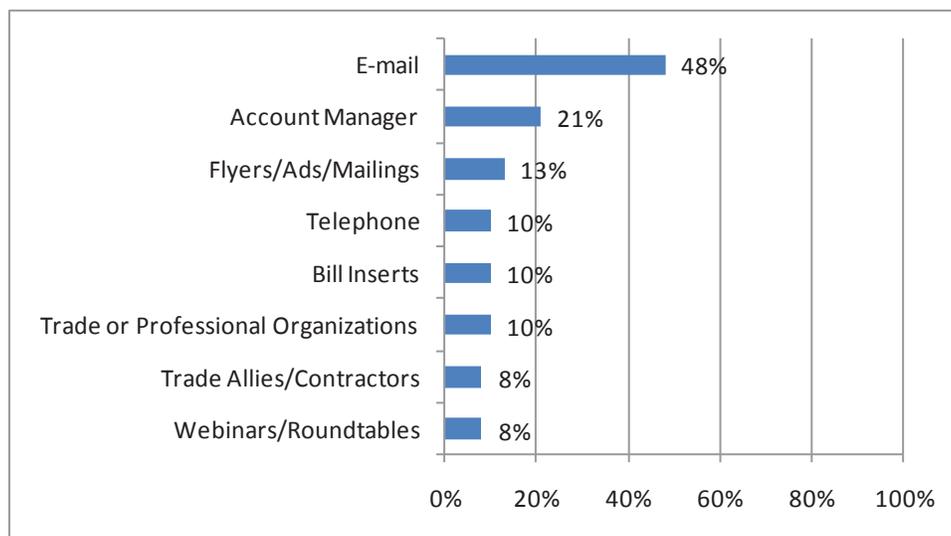
The five interviewed Account Managers also found the program’s marketing materials very helpful and easily accessible on the ComEd Smart Ideas for Your Business website. Interviewed Account Managers most often utilize the program’s fact sheets and case studies.

²² Includes participants who rated the program materials as “very useful” or “somewhat useful”

Only eight of the 15 interviewed contractors indicate that they utilize promotional materials from the program. Of those that do not currently utilize ComEd’s program materials, three contractors prefer that no marketing material be sent, while the remaining four would like to see various marketing aids including white papers and a timeline of the rebate process and how it works.

Although contractors are the most common source of program awareness, participants generally do not believe that contractors are the best ways to provide them with information regarding energy efficiency opportunities. Instead participants indicate that they prefer to receive this information through email (48%) or ComEd Account Manager (21%).

Figure 3-7. Preferred Methods of Contact (Multiple Response, Unprompted)



Source: PY3 CATI Participant Survey, note that responses under 5% are not included.

Non-participants also note that, in general, email (50%) and flyers/mailings (37%) are the best ways to reach them regarding energy efficient offerings. Overall, 57% of non-participating customers are aware that ComEd offers energy efficiency programs to their commercial customers, and 31% have heard of the Smart Ideas for Your Business Program. Of those who have heard of the program, almost one-third (32%) indicate that they are either not very familiar or not at all familiar with the program.

Interviewed contractors were asked to gauge their customer’s awareness of the Smart Ideas for Your Business Program. A majority of the contractors say their customers are aware of the program, either somewhat or very aware (10 of 15). One respondent noted that realty companies are more aware than any other sector they are involved with. Many of the interviewed contractors do agree that awareness of ComEd’s program offerings has increased over the years. As one registered trade ally explained:

“We’ve noted in the last year and a half or so that it’s become something they’re much more aware of. The first couple of years of the program they had no idea what we were talking about, and now we actually have customers that call us looking to try to utilize the benefits of that program.”

Despite reporting varied awareness of the program, almost all (14 of 15) interviewed contractors report that they always promote the program when discussing the possibility of implementing a project with customers that falls under the scope of the Smart Ideas for Your Business Program. The one contractor who rarely promotes the program reasons that because he works with large national accounts, one decision maker at the corporate office may decide to implement a project in all stores nation-wide, thus negating the need to promote ComEd’s program.

3.2.5 Barriers to Participation

Customer barriers

Lack of program awareness is a key barrier to participation in the Smart Ideas program, with 43% of non-participants not aware that ComEd offers energy efficiency programs for business customers and 69% not aware of the Smart Ideas program. Of those aware of the Smart Ideas program, approximately two-thirds (68%) consider themselves very or somewhat familiar with the program.

Reaching the correct decision-maker is a major hurdle both in increasing awareness of the program and encouraging participation. Program staff noted that broad-based outreach to business customers is difficult as their database only contains contact information for billing purposes; as a result, program-related communications often do not reach the energy decision-maker. Account Managers also noted that the decision-making process in some cases presents a barrier to participation:

“For the customer, especially with the national accounts, they in turn cannot just make a decision based on their store. They have to go through corporate, and it becomes a much more time consuming process.”

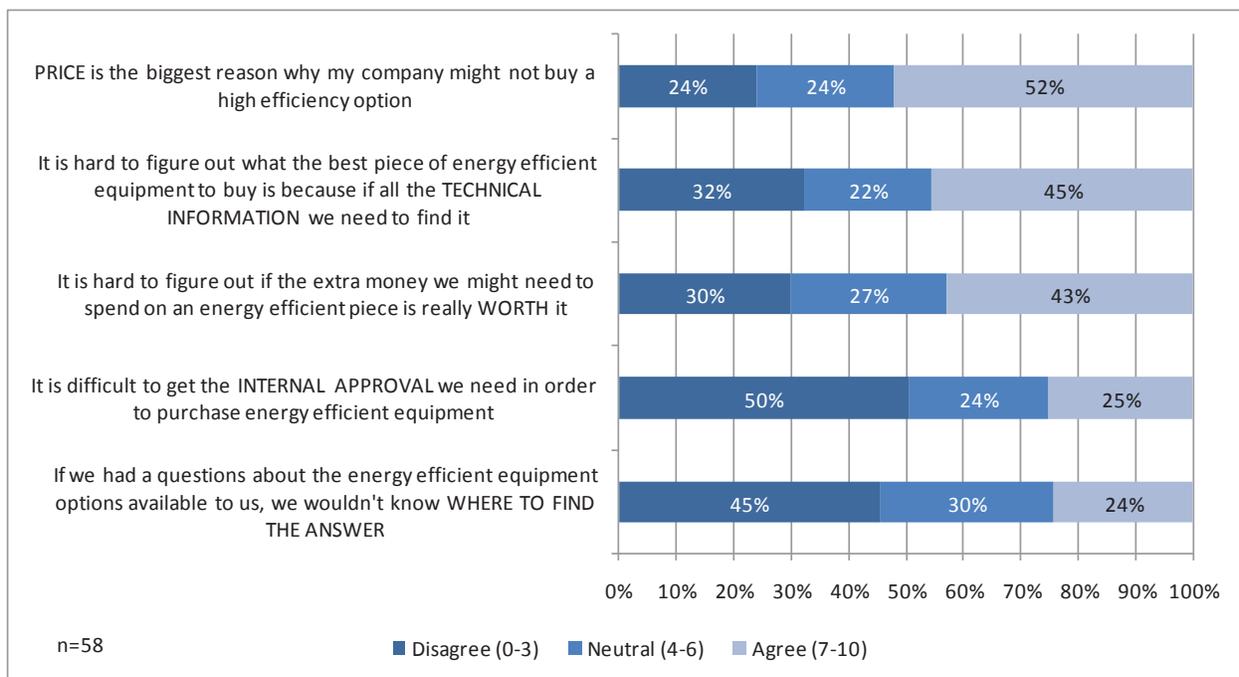
According to interviews with non-participants, 63% have the decision-maker for equipment installations at their facility. An additional 13% noted that the decision-maker was within their company but at a different location (possibly a corporate office). Only 19% indicated that equipment decisions were made by a landlord or property management firm.²³

²³ Note that the non-participant survey excluded customers in the small delivery service class (<100 kW demand) who would be more likely to rent their facility and not make equipment decisions.

The non-participant survey also explored potential barriers to the installation of energy efficient equipment, including price, lack of information or technical expertise, and internal approval processes. Respondents were asked to state their agreement with a series of statements describing common barriers to becoming more efficient.

Not surprisingly, price is a major barrier to energy efficiency, with 52% of respondents agreeing that price is the biggest reason for not buying a high efficiency option. After price, respondents most often cite informational barriers: 45% of respondents agree that it is difficult to find the necessary technical information and 43% agree it is difficult to determine whether efficient equipment is worth its cost. Figure 3-8 summarizes these responses.

Figure 3-8. Non-Participant Barriers



Many interviewed contractors (11 of 15) also noted that cost is the main barrier to the installation of energy efficient equipment for their customers. Other barriers include lack of understanding and foresight, lead time/delivery, and a “do not tell me what to do” American sentiment. One contractor noted that smaller customers are less likely to invest money in energy efficiency than larger customers.

“Nobody wants to spend the money because a lot of them [smaller companies] feel that they don’t have it. If they realize there are energy savings that will pay for itself maybe they’d find a way to do it, but the larger companies seem to be more willing to spend the money to do it.”

Not surprisingly, the current economic environment contributes to cost barriers. When asked to what extent the current economic downturn has affected investment decisions with respect to purchasing any new equipment, 29% of non-participants indicate that it has affected them “a great deal” (a rating of 10 on a scale of 0 to 10). Slightly fewer (21%) indicate that the economic situation has affected their investments in *energy efficient* equipment “a great deal.”

Despite these barriers, opportunities to increase participation in the Smart Ideas program among current non-participants exist. Almost two-thirds of non-participants (64%) indicate that there have been installations of equipment, or other upgrades, at their facility in the past three years. The most frequent installations were of lighting or HVAC equipment. While most of these respondents (91%) indicate that the equipment was energy efficient, it is unlikely that all of these projects would actually have qualified for incentives through the Smart Ideas program.

Energy/money savings was cited as the major reason for choosing an energy efficient option (73%). However, it was lack of knowledge about the Smart Ideas program that prevented them from implementing these projects through the program. Sixty-three percent of those who implemented “energy efficient” equipment are not aware of the Smart Ideas program, and an additional 20% – while aware of the program – did not have enough information about the program at the time of implementation.

Looking forward, many non-participants plan to install new equipment within the next two years at their facility (58% indicate yes and another 12% say maybe). Notably, 76% of those non-participants indicate that they are very likely to install energy efficient equipment and another 12% indicate that they are somewhat likely. Whether or not this equipment would meet the standards of the Smart Ideas program is unclear. However, these responses suggest that 1) despite the economic climate, customers are active in installing new equipment and 2) there is an interest in energy efficiency. This presents an opportunity for the program to encourage customers to install equipment that will meet the standards of the Smart Ideas program and further increase its participant base.

Contractor Barriers

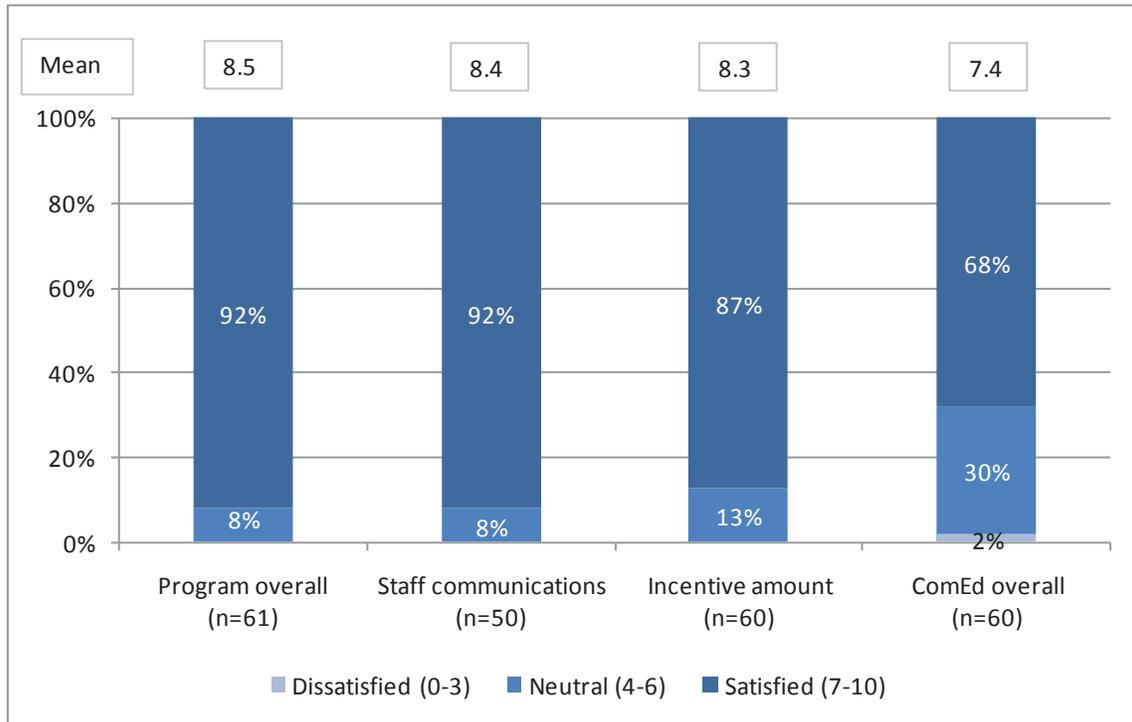
Four of the interviewed contractors had limited activity in the Smart Ideas for Your Business Program in PY3, completing less than four projects. Reasons for inactivity included economic conditions as well as a small company capacity that prevented the completion of more jobs in a given year.

3.2.6 Participant Satisfaction

Participants are satisfied with most aspects of the program. Customers were asked to rate – on a scale of 0 to 10, where 0 means “very dissatisfied” and 10 means “very satisfied” – several

aspects of the program. The highest satisfaction was with the program overall and staff communications, where 92% of participants are satisfied.

Figure 3-9. Program Satisfaction



*Note: This graph presents valid percentages, i.e., don't know, refused, and not applicable responses are excluded.
Source: PY3 CATI Participant Survey.*

Satisfaction with all program processes remains consistently high throughout each program year. Given the high satisfaction scores, it is not surprising that 74% of participants plan to participate again in the future. When asked what could be done to improve the program, many participants offered no recommendations (31%). Others thought that the program could improve with higher incentives (13%), greater publicity (13%), and better communication (11%).

Contractor Satisfaction

Overall interviewed contractors are satisfied with the Custom Program. When asked about the specific components that led to their level of satisfaction, a majority of respondents (9 of 15) report satisfaction with the staff, while six participants report satisfaction with the measures, incentives, and the short rebate process of the program.

Of the thirteen program allies who offered recommendations of how the Smart Ideas for Your Business Program could be improved, three recommended streamlining the application process, two recommended changes to the lighting offering (to include LED lighting and increase the

outdoor lighting incentives), and two recommend improving communication. Other recommendations include expanding incentives to include new construction, increasing incentive amounts, offering more training, allotting more time for customer interaction at the trade show, and providing more marketing materials.

3.3 Cost Effectiveness Review

This section addresses the cost effectiveness of the Custom program. Cost effectiveness is assessed through the use of the Illinois Total Resource Cost (TRC) test. The Illinois TRC test is defined in the Illinois Power Agency Act SB1592 as follows:

‘Total resource cost test’ or ‘TRC test’ means a standard that is met if, for an investment in energy efficiency or demand-response measures, the benefit-cost ratio is greater than one. The benefit-cost ratio is the ratio of the net present value of the total benefits of the program to the net present value of the total costs as calculated over the lifetime of the measures. A total resource cost test compares the sum of avoided electric utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures, to the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side program, to quantify the net savings obtained by substituting the demand-side program for supply resources. In calculating avoided costs of power and energy that an electric utility would otherwise have had to acquire, reasonable estimates shall be included of financial costs likely to be imposed by future regulations and legislation on emissions of greenhouse gases.²⁴

ComEd uses DSMore™ software for the calculation of the Illinois TRC test.²⁵ The DSMore model accepts information on program parameters such as number of participants, gross savings, free ridership, program costs and CO₂ reductions. It then calculates a TRC that fits the requirements of the Illinois Legislation.

One important feature of the DSMore model is that it performs a probabilistic estimation of future avoided energy costs. It looks at the historical relationship between weather, electric use and prices in the PJM Northern Illinois region and forecasts a range of potential future electric energy prices. The range of future prices is correlated to the range of weather conditions that could occur, and the range of weather is based on weather patterns seen over the historical record. This method captures the impact that extreme weather has on electricity prices. Extreme weather generally results in electricity price spikes and creates a skewed price distribution. High prices are going to be much higher than the average price while low prices are going to be

²⁴ Illinois Power Agency Act SB1592, pages 7-8.

²⁵ Demand Side Management Option Risk Evaluator (DSMore) software is developed by Integral Analytics.

only moderately lower than the average. DSMore is able to quantify the weighted benefits of avoiding energy use across years which have this skewed price distribution.

Results

Table 3-10 summarizes the unique inputs used in the DSMore model to assess the TRC ratio for the Custom program in PY3. Most of the unique inputs come directly from the evaluation results presented previously in this report. Measure life estimates and program costs come directly from ComEd. All other inputs to the model, such as avoided costs, come from ComEd and are the same for this program and all programs in the ComEd portfolio.

Table 3-10 Inputs to DSMore Model for Custom Program

Item	Value Used
Measure Life	12
Utility Administration and Implementation Costs	\$684,212
Utility Incentive Costs	\$2,878,922
Net Participant Costs	\$12,317,152

Based on these inputs, the Illinois societal TRC for this program is 0.99 and the program does not pass the Illinois TRC test.

Section 4. Conclusions and Recommendations

This section highlights the conclusions and recommendations from the PY3 evaluation of ComEd’s Smart Ideas for your Business Custom Program. The primary evaluation objectives include quantifying the gross and net energy and demand impacts resulting from the rebated measures and assessing program marketing, and delivery. Below are the key conclusions and recommendations.

4.1 *Key Impact Conclusions and Recommendations*

Gross Impacts

Based on the sample size of 32 custom projects evaluated in PY3, the gross impact results yielded an energy realization rate of 0.85 which is considered to be high for a custom program. This shows that ComEd is continuing to do a good job of estimating gross impacts for Custom energy efficiency projects in the program. In general the implementation team did a very good job of ensuring that all measures are installed and operational. PY3 energy savings realization rate results indicate that the smallest projects (stratum 3, RR = 1.14) realized a greater proportion of the ex ante claims than the largest (stratum 1, RR = 0.81) and medium projects (stratum 2, RR = 0.57). The evaluation team hypothesizes that this may be due to the complexity and additional uncertainty associated with the large projects in strata 1 and strata 2. The program can further improve the gross impact results by using improved data collection methods and enhanced calculation models. Key evaluation conclusions and recommendations include the following:

Improvements to Ex Ante Impact Estimates²⁶

Finding. The program savings calculations did not always represent annual operating conditions. For example, the ex ante calculations were found to not accurately represent facility operating hours (e.g. #8557, and #5311, #5613 & #4367).

- **Recommendation.** To improve program calculations and realization rates, the program could do a better job of verifying operating hours and to examine whether or not the data collected represents typical annual operating conditions for the installed equipment. Adjustments should be made to energy usage calculations (if appropriate) based on information provided by the customer or other available sources.

²⁶ Additional specific site information is not available to protect customer confidentiality

Finding. The program calculations (specifically for compressed air projects) are not normalized to account for changes in facility production levels or equipment load profiles (e.g. # 7339, #6997 and #4371).

- **Recommendation.** Determine whether pre or post measurement data will require normalization to properly adjust for production differences including appropriate adjustments for weekly or seasonal variation or for market fluctuations. For compressed air projects energy usage calculations should be normalized if the airflow profile has changed from pre retrofit period to the post retrofit period.

Finding. The program calculations did not perform reasonable sanity or reality checks to verify the reasonableness and the range of estimated savings for projects that involved estimation of critical parameters. (e.g. #2559, #8359 and #7461)

- **Recommendation.** Where possible collect site specific data through measurements in support of critical model parameters. Avoid using rules of thumb or percent savings from manufacturer literature. At a minimum verify all assumptions and estimates with appropriate considerations of site specific conditions. Additionally, implementers can obtain manufacturer performance data sheets or use Air Master+ software for compressor units and use them as needed to aid the ex ante calculations. When performing billing analysis, collect information to ensure that other factors (that might skew the savings) are accounted (i.e. miscellaneous loads, other energy efficiency measures and addition of new loads, etc).

Finding. The peak kW calculations were not always consistent with PJM requirements or were not representative of the actual operation of the system during the peak period (e.g. # 6215, #3554 and #8568). Peak kW estimates were often set to zero.

- **Recommendation.** Calculate peak kW savings for all projects and ensure that the estimated savings meet PJM peak demand calculation requirements for weather and non weather dependent projects.

Finding. There were a number of cases where the sources of inputs used in the program calculations were not documented (e.g. #8557, #2234, #6215 and #5613). Also, sources for electric unit cost (\$/kWh) were not available and were found to vary considerably site-to-site.

- **Recommendation.** Provide sources for all the inputs and assumptions used for program calculations (especially for any critical parameters such as load factors, power factor, full load amps, temperature set points and operating hours). Collect nameplate or manufacturer information for all the equipment; the nameplate information can be used to verify inputs used for ex ante savings calculations.

Finding. We found spreadsheet cell reference errors in the ex ante baseline calculations for project # 7461 resulted in higher savings than appropriate, producing a much lower realization rate than it should have been if the reference error were absent. Also, a similar cell reference error was observed for project #391 that reduced the total reported ex ante savings.

- **Recommendation.** Double-check spreadsheets to watch for calculation errors.

Finding. For outdoor lighting, we found that for the lights controlled by a photocell, which entailed dusk-to-dawn operation, the hours of operation and peak demand savings were incorrectly estimated.

- **Recommendation.** Calculate hours of operation using the actual dusk to dawn schedule. Use the geographical location specific sunrise and sunset times for each day to estimate the annual hours of operation. There are no peak demand savings for most outdoor lighting measures.

Finding. For VSD and controls projects, it was found that the control strategies were not accurately modeled in the ex ante calculations.

- **Recommendation.** For estimating savings accurately for VSD projects, use the equipment control strategy (throttling, bypass or cycling) that is consistent with the site conditions for estimating the baseline energy usage. For post retrofit conditions determine if the VFD is manually set to operate at constant speeds or is programmed to operate within a set speed range. Examples include projects #7461 and #4081.
- **Recommendation.** For control projects, include sources for all the temperature, pressure or other equipment control settings in the ex ante documentation and verify that the reported settings were actually implemented. Avoid using manufacturer claimed savings in ex ante calculations without performing calculations (at a minimum simple engineering calculation) based on actual site specific conditions (e.g. #5804, #7109 and #2234).

Baseline Selection Issues

Finding. The baseline condition was adjusted (in the evaluation) for four projects, which had a significant effect on the total realized savings for two (#391 and #3820) projects. The most common problem observed is the use of pre-existing equipment as the baseline.

- **Recommendation.** One step that would improve the realization rate would be adjusting the baseline condition consistent with the evaluation approach when the existing equipment being removed has a relatively short remaining useful life or generally requires replacement.

- Identify projects explicitly in program files as replace-on-burnout, natural turnover, or early replacement.
- The age, remaining useful life, operating condition of the existing equipment and the estimated time at which the existing equipment would have been replaced in the future should be verified before selecting the existing equipment as the baseline condition.
- The true test for early replacement should be whether or not there is strong evidence pointing to program induced accelerated adoption. For the replace-on-burnout and natural turnover cases, baselines should be based on the efficiency of alternative new equipment or code requirements and not the existing in situ equipment.

Strengthen Evaluation Participation

Finding. In the course of conducting the evaluation, a few participants mentioned that they wanted us to limit evaluation data collection activities since they had already spent considerable resources to meet the program requirements. While the evaluation activities for PY3 were not affected by this issue it could potentially affect future evaluations. For large projects, if the customer refuses to provide critical data or access to the site it may limit evaluation activities and affect the estimation of project savings. In some cases, the evaluation may require additional data (not previously collected by the program) to verify the savings. There were also a couple of cases where the customer was contacted multiple times but did not respond to evaluation data requests. Examples include projects #2559, #5804 and Project #3554.

- **Recommendation.** Evaluation participation requirements need to be clearly explained to participants, both at the time of final project application submission and when they are paid incentives.

Data Collection

Finding. When the program collects measured data in support of ex ante impact calculations and uses that as a source for estimating savings or for model calibration, the resulting ex ant savings estimates were found to be more accurate (e.g. #8359, #1030, #3554 and #3454).

- **Recommendation.** The program should continue to take measurements for pre retrofit and post retrofit equipment. Measured performance of PY3 projects resulted in accurate savings calculations and high realizations rates (also reflected by the resulting high program RR). Projects with measured program data (obtained from logging or from a customer's SCADA system) were used by the evaluators to inform modeling and assign values to critical parameters. Evaluators do not have access to pre-installation equipment and conditions; therefore, ex ante measured data can greatly benefit the accuracy of ex post savings calculations. However, it is

recommended that the program collect kW measurements and use amperage metering sparingly, such as when the panel size is too small to install kW current transducers or when only amperage data is collected in the SCADA system.

Program Eligibility Requirements

- **Recommendation.** Program implementers should provide strong evidence and supporting documentation that clearly demonstrates that the installed higher efficiency equipment exceeds the efficiency of standard practice.

Projects with Program Rules Issues

Finding. There were a few sites in the impact sample where the evaluation team concluded that the project did not adhere to the program rules. Ex post gross savings were not disallowed for these projects.

Finding. Applicants are required to submit the final application within 60 days of the project completion date. Final applications submitted for the two projects (#7109 and #7739) exceeded this 60 day limit. For project #7739, the final application was submitted about 300 days after the installation of the measure.

- **Recommendation.** Program implementers should ensure that all project final applications are submitted in time as required by the program.

Finding. There were also potential issues with the accuracy of program reported project costs or incremental costs. Payback calculations used to screen projects for eligibility and the incentives cap for projects are affected due to these inconsistencies. For example (#5872), the incremental cost estimation accounted for only the incremental labor cost and did not account for incremental material cost. The project cost (e.g. #391 and #1030) used for payback calculations was not the project cost in the final application. Furthermore, we found variability in price per kWh that can also affect the outcome of payback screening results.

- **Recommendation.** Program payback calculations should use the accurate project cost or incremental cost for all projects.
- **Recommendation.** Typically electric unit cost (\$/kWh) for each customer can vary based on the utility rate schedule. During this evaluation we observed a wide range of variation of the electric unit cost (\$/kWh) across customers and most of the sources for these values were provided by the customer. It is not clear if the implementers have taken additional steps to verify customer reported electric unit cost (\$/kWh) values. Ex ante project documentation should include the customer energy billing information that includes electric unit cost (\$/kWh) to confirm that the customer reported cost is consistent. Note that in some cases, the electric unit cost (\$/kWh) may vary with seasons

or time of use. This will ensure that the payback calculation is accurate and would be used to confirm the eligibility of the project.

Net Impacts

Finding. Free-ridership levels for PY3 custom program are 44%, which is a significant increase from 24% in PY2. Mean free-ridership was relatively high across the two largest projects (sampling strata 1). Program influence was low for a number of different reasons. In some cases, participants report that program implementers arrived late in the decision making process and offered incentives for projects that had already been decided upon. There were also several cases where the customer reported that they would have installed the same equipment at the same time in the absence of the program incentives. The evidence also indicates that program claims were made for projects that customers initiated for non-energy savings reasons and for which no alternative was ever considered.

- **Recommendation.** One approach to reducing free ridership is for program administrators to simply exclude projects from the program that they believe have a high probability of being free riders. For example, incentives should not be provided to projects that are already installed. Similarly, if there is evidence that the program did not contribute significantly to the decision to install a particular project or equipment type then an incentive may not be warranted. Incentives might only be provided if the program process leads to a higher efficiency level than initially planned. Also, ensure that program incentives are not offered for measures and technologies that are industry standard practice or projects that were being implemented by end users in response to mandates from other regulatory agencies, for example, state building code requirements.
- **Recommendation.** Consider tying performance of the program implementation staff (or implementer in general) not only with the gross impact but also with the verified net savings. Tying performance to verified net savings as reported through the impact evaluation process is likely to increase project quality and the accuracy of initial savings estimates.

Tracking System

Peak Demand. About forty percent of the tracking records were populated with zeros for peak demand impact (kW), affecting the reliability and accuracy of the evaluation results. It was not clear whether the PY3 tracking system demand savings estimates that are set to zero truly reflect an estimate of zero demand savings, or rather are set to zero when they should be set to missing. Currently, the custom application form does not have fields to report peak demand savings and it is unclear how the non-zero demand savings are populated into the tracking database. Furthermore, there is evidence from the sample that some peak demand impact

estimates that are prepared as part of the custom ex ante impact calculations are not subsequently data entered, leading to another potential source of under-reporting of peak demand savings.

- **Recommendation.** Enhanced efforts are needed to report peak demand savings for all the projects. To provide consistent estimates of peak demand savings, the program should include dedicated fields in the custom application form for the applicant to report peak demand savings. We recommend that the implementers populate the ex ante demand savings variable in the tracking system with non-zero values where appropriate, so that the program does not under-report demand accomplishments

Measure Descriptions. Measure description information is reasonably populated in the tracking system but there is room for improvement in consistently labeling individual measures and recording measure end use. Currently, projects involving more than one measure appear as a single record, and therefore the measure descriptions tend towards a mixture of rough information concerning the measures installed. Implementation staff did not populate end use consistently, as it is left blank many times, or populated with a value that is inconsistent with the measure description (e.g., “Other” or “Blank”).

- **Recommendation.** ComEd should consider tracking modifications that would isolate individual records for each measure installed and achieve greater levels of consistency in reporting variables that describe measures and end-uses affected. ComEd should also populate end use consistently. With these improvements in place, it would be possible for either the program staff or the evaluation team to produce measure-based summary statistics and more precisely track program accomplishments.

4.2 *Key Process Conclusions and Recommendations*

Program Participation

Finding. Despite a 160% increase in the number of completed projects, some sectors (e.g., lodging, medical, and schools/colleges) have experienced stagnant growth in participation in the Custom Program. Some of these (lodging and medical) have had relatively high per project savings.

- **Recommendation.** Consider special offerings for sectors with limited participation but high savings potential. Hard-to-engage industries with high savings potential might benefit from specific offerings to encourage more participation. Such an approach has been successfully employed by other utility programs, e.g., through targeted RFP programs that have packaged prescriptive and custom measures into one comprehensive offering. Further research might be required to identify industries to target for special promotions and identify their specific barriers to participation.

Participant Satisfaction

Finding. Participants and contractors are satisfied with most aspects of the program. The highest participant satisfaction was with the program overall and staff communications. Seventy-four percent of PY3 participants plan to participate again in the future. Participant recommendations for improvements included higher incentives (13%), greater publicity (13%), and better communication (11%).

Trade Ally Network

Finding. Most interviewed contractors indicated that the Smart Ideas for Your Business Program influenced their business. While many of these contractors had already adopted business models that focused on energy efficiency and were recommending energy efficient equipment before participating in the program (although not necessarily equipment that would have qualified for the program), most thought that the program was influential in increasing their overall sales. Additionally, a few contractors changed their marketing practices or hired additional staff due to their participation in the Smart Ideas program.

Finding. PY3 marked the introduction of new trade ally requirements. While most interviewed trade allies saw no problems with these requirements, active non-trade ally contractors most often cite the time burden of attending the training in person as the main reason for not becoming a trade ally.

- **Recommendation.** Consider offering basic training online. If disseminating the information provided in the training is considered important to continue to increase the quality of applications, then the program should consider offering training via a web portal. This will allow more contractors to take advantage of the training opportunities and would reduce a barrier to becoming a trade ally.

Finding. The requirements and benefits of becoming a ComEd trade ally do not always seem to be communicated well to contractors. Several of the interviewed trade allies were not aware of their status in the network and the new requirements of becoming or remaining a trade ally. Interviewed non-trade allies were generally not aware of the benefits of the trade ally designation.

- **Recommendation.** Attempt to enhance and better communicate the benefits of becoming a registered trade ally. By offering additional benefits, such as more co-branding opportunities, more contractors may be enticed to register with the program.

Trade Ally Bonus

Finding. Only five of 15 interviewed contractors (all of them trade allies) were aware of the PY3 trade ally bonus. However, some of the interviewed non-trade ally contractors expressed interest in the bonus offering and indicated that they would have increased promotion of the program had they been aware of the offering.

- **Recommendation.** Consider increasing the promotion of the trade ally bonus. By leaving interested contractors unaware, the program might have missed opportunities to attract more projects.

Finding. Additional research into similar bonuses offered by other utilities found that apart from the bonus structure, strong communication and clear expectations are crucial to the success of such an effort.

- **Recommendation.** The Smart Ideas program has already modified its bonus offering for PY4, adopting a tiered system modeled after Ameren Illinois' trade ally incentive structure. The program should strive to communicate the new bonus program early and clearly to both trade allies and non-ally contractors, and provide sufficient lead time for contractors to increase their promotion and take advantage of the offering to the fullest extent.

Program Marketing and Outreach

Finding. Marketing and outreach increased substantially in PY3. The marketing plan for PY3 included trigger tactics that were initiated throughout the program year. Initial tactics included several low or no cost measures such as targeted outreach to customer groups (e.g., trade associations) and customers who attended the Energy Efficiency Expo, following up on leads from PY1 and PY2, increasing the frequency of the electronic newsletter, and a direct mailing to larger customers. As a result of the increased marketing, almost half (49%) of Custom participants recall having been directly contacted by ComEd or KEMA.

Finding. Lack of program awareness is still a key barrier to participation in the Smart Ideas program. In addition, reaching the correct decision-maker is a major hurdle both in increasing awareness of the program and encouraging participation. However, opportunities exist to increase participation in the Smart Ideas program among current non-participants. Almost two-thirds of non-participants indicate that there have been installations of equipment, or other upgrades, at their facility in the past three years. Despite the economic climate, customers are active in installing new equipment and have an interest in energy efficiency. This presents an opportunity for the program to encourage customers to install equipment that will meet the standards of the Smart Ideas program and further increase its participant base.

- **Recommendation.** The program should attempt to develop a more targeted database of energy decision makers for their larger customers. To start this database, Account

Managers could be engaged to provide decision maker contact information for each of their managed accounts.

Account Managers

Finding. All interviewed Account Managers were generally receptive to the introduction of new Smart Ideas goals for Account Managers. They thought the goals were both realistic and achievable. While interviewed Account Managers generally found their new Smart Ideas goals reasonable, several noted that it would become increasingly difficult to recruit their customers to the Energy Efficiency Expo, if largely similar information was presented.

- **Recommendation.** Consider offering new attractions for future Energy Efficiency Expos. The program should find ways to keep the Expo attractive for returning customers or consider adjusting Account Manager goals with respect to Expo recruitment.

Finding. No formal process for tracking customer leads exists in the Smart Ideas Program. However, interviewed Account Managers indicated that such a system would be a useful tool for Account Managers and Smart Ideas staff alike.

- **Recommendation.** The program should attempt to develop a more formal system of tracking leads, especially among large managed accounts. This would facilitate more coordinated follow-up by program staff and could also help in building a more useful marketing database for targeted outreach towards large customers.

Section 5. Appendices

5.1 PY3 Program Application Form

CUSTOM APPLICATION

June 2010 through May 2011

How to Participate in *Smart Ideas for Your Business*

1. Check Project and Equipment Eligibility

- ✓ Project must be a new facility improvement that results in a permanent reduction in electrical energy usage (kWh).
- ✓ All installed equipment must meet or exceed the specifications given in the application and be installed in facilities served by ComEd. Customer must have a valid ComEd account number on a ComEd non-residential rate.

2. Submit Pre-approval Application to Reserve Funds

- ✓ We strongly recommend that you submit a pre-approval application to reserve program funds for your project. Pre-approval is required for some prescriptive applications and for all custom applications. Check the specifications page for details.
- ✓ Fill out the **Applicant Information** form (check the "Pre-Approval" box) and the **Incentives Worksheet** for the measures that you plan to install. You may submit the application via mail, fax or e-mail.
- ✓ When your application is reviewed and approved, incentive funds will be set aside for your project for 90 days. For some projects, a pre-installation inspection will be required and you will be contacted to schedule it.

3. Install Equipment or Perform Project Work

- ✓ Incentive funds are reserved for 90 days, so you have 90 days to complete your project. Contact ComEd's *Smart Ideas* team for specific questions regarding funding reservations and extensions.
- ✓ Be sure that the equipment installed meets or exceeds the specifications and requirements found on the **Specifications** page.

4. Submit Final Application

- ✓ Submit a final application as soon as possible after the project is completed (it must be submitted within 60 days of project completion). The final application is the same form as the pre-approval application. Check the box that says "Final Application" and attach the following documentation: a signed **Final Application Agreement**, a scope of work (detailed project description), dated and itemized invoices for the purchase and installation of all equipment installed and specification sheets for all equipment installed showing that it meets the program specifications.
- ✓ The program team will review your final application. For some projects, a final inspection will be part of the final review and you will be contacted to schedule it.

5. Receive Incentive Payment

- ✓ The program team will send incentive checks four to six weeks after final project approval.

*Pre-Approval Application for Prescriptive & Custom Projects

Custom and some prescriptive projects require a pre-approval application to reserve funding. A pre-approval application is not a guarantee of an incentive; the actual incentive will be based on the energy savings and equipment installed as determined in the final application. Funds will be reserved for 90 days, unless an applicant is granted an extension. The program team reserves the right to contact the customer before the reservation expiration date to ensure that the project is moving forward. If the project is not underway, the reservation will be cancelled. Funds that have been reserved are not transferable to other projects, facilities and/or customers. A waiting list may be established if funds become fully subscribed.

MAIL/FAX APPLICATION TO:

ComEd *Smart Ideas for Your Business*
120 E. Liberty Dr. #290
Wheaton, IL 60187

Call: 888-806-2273 Fax: 630-480-3436 E-mail: ComEdSmartIdeas@kema.com

Visit our Website at www.ComEd.com/BizIncentives

APPLICANT INFORMATION (REQUIRED)

Pre-approval Date _____

Attach:

- Incentives worksheet for measures installed
- Specification sheets for new equipment
- Scope of work with type, quantity and wattage of old and new equipment

Estimated Project Completion Date _____

Estimated Project Cost _____

Final Application Date _____

Please update project cost and completion date below.

Attach:

- Incentives worksheet for measures installed
- Signed final application agreement (next page)
- Updated scope of work (detailed project description)
- Dated, itemized invoices for the purchase and installation of all equipment
- Equipment specification sheets showing that equipment installed meets program specifications

Actual Project Completion Date _____

Actual Project Cost _____

NAME OF COMPANY	NAME AS IT APPEARS ON YOUR UTILITY BILL
-----------------	---

BUSINESS TYPE (Check One)

<input type="checkbox"/> Office	<input type="checkbox"/> Retail/Service	<input type="checkbox"/> Hotel/Motel	<input type="checkbox"/> Grocery	<input type="checkbox"/> Light Industry	<input type="checkbox"/> College/University
<input type="checkbox"/> School/K-12	<input type="checkbox"/> Restaurant	<input type="checkbox"/> Medical	<input type="checkbox"/> Warehouse	<input type="checkbox"/> Heavy Industry	<input type="checkbox"/> Miscellaneous

NAME OF CONTACT PERSON	TITLE
------------------------	-------

TELEPHONE ()	FAX ()
----------------------	----------------

E-MAIL ADDRESS _____

ADDRESS WHERE MEASURES INSTALLED _____

CITY WHERE MEASURES INSTALLED	STATE	ZIP + 4
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YOUR MAILING ADDRESS _____

YOUR CITY	STATE	ZIP + 4
-----------	-------	---------

COMED ACCOUNT NUMBER (WHERE MEASURES INSTALLED) _____

TAXPAYER ID NUMBER (SSN/FEIN)	TAX STATUS <input type="checkbox"/> Corporation (Inc., LLC, PC, etc.) <input type="checkbox"/> Other (Individual, Partnership – may receive 1099) <input type="checkbox"/> Tax Exempt
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CONTRACTING COMPANY	CONTRACTOR CONTACT NAME
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CONTRACTOR PHONE ()	CONTRACTOR E-MAIL
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CONTRACTOR MAILING ADDRESS _____

CONTRACTOR CITY	STATE	ZIP + 4
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As an eligible customer, I verify the information is correct and request consideration for participation under this program.

CUSTOMER SIGNATURE (COMED CUSTOMER)	PRINT NAME
-------------------------------------	------------

TOTAL INCENTIVE REQUESTED*	DATE
----------------------------	------

*Incentive cannot exceed 100 percent of the incremental measure cost and 50 percent of the total project cost and must meet all program terms and conditions.

FINAL APPLICATION AGREEMENT

As an eligible ComEd customer, I certify that work was completed on this project between June 1, 2010, and May 31, 2011. My decisions to acquire and install the energy efficiency measures can be demonstrated by documentation indicating contract dates after March 1, 2010. The energy efficiency measures are for use in my business facility and not for resale. I understand that project documentation, including product specification sheets and copies of dated invoices for the purchase and installation of the measures is required and I am submitting that documentation with this final application. (Further documentation requirements can be found in the Policy and Procedures Manual, which can be found at the program Web site www.ComEd.com/BizIncentives or by calling the program hotline.)

I understand that the location or business name on the invoice must be consistent with the application information. Final Applications and all required supporting documentation should be received by May 15, 2011.

I agree to verification by the utility or their representatives of both sales transactions and equipment installation.

I understand that these incentives are available to all customers who pay into the Energy Efficiency and Demand Response Adjustment (Rider EDA) and receive their electricity over ComEd wires, regardless of retail electric supplier.

I certify that the information on this application is true and correct and that the taxpayer ID number and tax status is the applicant's. I understand that incentives over \$600 will be reported to the IRS unless the applicant is exempt. I understand that incentive payments assume related energy benefits over a period of five years or for the life of the product, whichever is less.

I agree that if: (1) I do not install the related product(s) identified in my application or (2) I remove the related product(s) identified in my application before a period of five years or the end of the product life, whichever is less, then I shall refund a prorated amount of incentive funds to ComEd based on the actual period of time in which the related product(s) were installed and operating (or the full amount if the product was never installed). This is necessary to assure that the project's related energy benefits will be achieved.

I understand that the program may be modified or terminated without prior notice.

I understand that the final application and all required documentation must be received by the ComEd *Smart Ideas for Your Business* program within 60 days of project completion. I understand that this documentation must prove that all equipment has been purchased and installed.

I certify that this project involves a facility improvement that results in improved energy efficiency. I certify that replaced equipment has been permanently removed. I also certify that all materials removed, including lamps and PCB ballasts, have been permanently taken out of service and disposed of in accordance with local codes and ordinances, and that no resale of replaced equipment has or will take place. I certify that I have complied with any applicable codes or ordinances. Information about hazardous waste disposal can be found at: www.epa.gov/epawaste/hazard/index.htm.

In no case will ComEd pay more than 100 percent of the incremental measure costs and 50 percent of the total cost of the project. I understand that ComEd or its representatives have the right to ask for additional information at any time. ComEd's *Smart Ideas for Your Business* program will make the final determination of incentive levels for this project.

The program has a limited budget. Applications will be processed until allocated funds are reserved or spent. Final applications should be received by May 15, 2011, to be eligible for funding under the current program period.

I understand that my company may be recognized as a program participant in promotional materials; however, project details will not be released without prior consent. If I choose to opt out of any recognition, I will indicate my choice in a written letter.

I understand that ComEd does not guarantee the energy savings and does not make any warranties associated with the measures eligible for incentives under this program and, further, that ComEd has no obligations regarding and does not endorse or guarantee any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures.

I understand that in the event the application received pre-approval and funds were reserved based upon the application, such pre-approval or reservation, including the specific dollar amount of reservation, did not represent a guarantee that such funds will be paid. Payment of incentives will be based upon the final application and program terms and conditions, as well as the availability of funds.

I have read and understand the program requirements, measure specifications and terms and conditions set forth in this application and agree to abide by these requirements. Furthermore, I concur that I must meet all eligibility criteria in order to be paid under this program.

CUSTOMER SIGNATURE (COMED CUSTOMER)	PRINT NAME	DATE
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FOR FINAL APPLICATIONS, SIGN AND SUBMIT ONLY AFTER ALL EQUIPMENT HAS BEEN INSTALLED. A CUSTOMER SIGNATURE IS REQUIRED FOR PAYMENT.

PAYMENT RELEASE AUTHORIZATION (OPTIONAL)

Complete this section ONLY if incentive payment is to be paid to an entity other than the ComEd customer listed on the Applicant Information page.

I am authorizing the payment of the incentive to the third party named below and I understand that I will not be receiving the incentive payment

Authorized by:

CUSTOMER SIGNATURE (COMED CUSTOMER)	PRINT NAME	DATE
-------------------------------------	------------	------

Check should be made payable to:

PAYEE: COMPANY/INDIVIDUAL NAME

MAILING ADDRESS

CITY	STATE	ZIP + 4
------	-------	---------

TELEPHONE
()

TAXPAYER ID NUMBER (SSN#/FEIN OF PAYEE)	TAX STATUS <input type="checkbox"/> Corporation (Inc., LLC, PC, etc.) <input type="checkbox"/> Other (Individual, Partnership – may receive 1099) <input type="checkbox"/> Tax Exempt
---	---

TERMS AND CONDITIONS

Terms and Conditions

Commonwealth Edison Company (ComEd) is offering prescriptive and custom incentives under the ComEd *Smart Ideas for Your Business* program to facilitate the implementation of cost-effective energy efficiency improvements for non-residential (commercial and industrial) customers.

Funds are limited and subject to availability.

Program Effective Dates

Smart Ideas for Your Business energy efficiency incentives are offered until approved funds are exhausted or May 31 of each program year, whichever comes first. The effective dates of Program Year 3 (June 1, 2010 through May 31, 2011) of the *Smart Ideas for Your Business* program and application submittal requirements are as follows:

- ✓ Projects with a final completion date before June 1, 2010, are not eligible for an incentive.
- ✓ All Program Year 3 *Smart Ideas for Your Business* projects must be completed and final applications received no later than May 15, 2011.
- ✓ Subsequent program year budgets and plans will be made available toward the end of the existing program year. At the current time, ComEd has a commitment to provide this program through May 31, 2011.

Program and Project Eligibility

The *Smart Ideas for Your Business* program offers both prescriptive incentives for some of the more common energy efficiency measures and custom incentives for those eligible improvements not included on the list of prescriptive measures. Program incentives are available under the *Smart Ideas for Your Business* program to non-residential customers within ComEd's service territory. These incentives are available to all non-residential customers who pay into the Energy Efficiency and Demand Response Adjustment (Rider EDA) and receive their electricity over ComEd wires, regardless of retail electric supplier.

Public buildings such as government buildings, municipal facilities and public schools should refer to the Illinois Department of Commerce and Economic Opportunity (DCEO) Program (www.illinoisenergy.org).

Custom projects must involve measures that result in a reduction in electric energy usage due to an improvement in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a custom incentive. However, projects that involve an automated control technology such as energy management system programming may be eligible for an incentive. All projects must meet ComEd's cost-effectiveness requirements.

Projects involving measures covered by the prescriptive incentive portion of the program are not eligible for a custom incentive. However, the applicant has the option to apply for a custom incentive for projects that involve a combination of prescriptive incentive measures and measures that are not eligible for prescriptive incentives. For example, a chiller system upgrade project that includes a chiller replacement could be a custom project, even though the chiller replacement would normally go through the prescriptive portion.

Project requirements under the *Smart Ideas for Your Business* program include the following:

- ✓ Projects must involve a new facility improvement that results in a permanent reduction in electrical energy usage (kWh).
- ✓ Equipment must be installed and operational.
- ✓ Projects that are NOT eligible for an incentive include the following:
 - Fuel switching (e.g. electric to gas or gas to electric)
 - Changes in operational and/or maintenance practices or simple control modifications not involving capital costs
 - On-site electricity generation
 - Projects involving gas-driven equipment in place of electric equipment (such as a chiller)
 - Projects focused primarily on power factor improvement

- Projects that involve peak-shifting (and not kWh savings)
- Renewables

- ✓ Any measures installed at a facility must be sustainable and provide 100 percent of the energy benefits as stated in the application for a period of five years or for the life of the product, whichever is less. If the customer ceases to be a delivery service customer of ComEd, or removes the equipment or systems at any time during the five-year period or the life of the product, the customer may be required to return a prorated amount of incentive funds to ComEd.

Incentive Payment Limits

For both the prescriptive and custom programs, the total incentive paid cannot exceed 100 percent of the incremental measure cost and 50 percent of the total project cost. The definition of incremental measure cost depends on whether the measure being installed is considered to be a replacement or a retrofit. For replacement measures, the incremental measure cost is defined as the cost to purchase and install the energy efficient equipment minus the cost to purchase and install similar equipment that would meet federal and local energy standards but not qualify for an incentive under this program. For retrofit measures, the incremental measure cost is simply the cost to purchase and install the qualifying measures. Contractor labor costs can be considered in the project cost. Internal customer labor costs cannot be included in the project cost.

Program year incentive limits per facility for prescriptive or custom incentives are shown in Table 1. A facility is defined as contiguous property for which a single customer is responsible for paying the ComEd electricity bill. Customers may receive up to \$400,000 per program year (June 1, 2010 through May 31, 2011), per facility, as described in the following table:

Table 1. Program Year Incentive Limits per Non-Residential Customer Facility

Prescriptive Incentives	100% of the calculated incentive up to \$100,000 50% of the calculated incentive above \$100,000 Maximum \$200,000 prescriptive incentive per program year (June 1 through May 31)
Custom Incentives	100% of the calculated incentive up to \$100,000 50% of the calculated incentive above \$100,000 Maximum \$200,000 custom incentive per program year (June 1 through May 31)
Total Incentive Limit	\$400,000 per program year (June 1 through May 31)

Final Application

The Final Application must be submitted within 60 days of project completion. Project documentation, including copies of dated invoices for the purchase and installation of the measures and/or product specification sheets, is required.

The location or business name on the invoice must be consistent with the application information. Final applications and all required supporting documentation must be received by May 15, 2011, to be applicable for Program Year Three.

The project invoice should provide sufficient detail to separate the project cost from the cost of other services such as repairs and building code compliance. ComEd reserves the right to request additional supporting documentation as deemed necessary to ensure measure eligibility and verify that the expected energy savings will occur. All customer information will be held in confidence. Requested information could include: equipment purchase dates, installation dates, proof that the equipment is operational, manufacturer specifications, warranty information and proof of customer co-payment.

TERMS AND CONDITIONS

Application Review Process

Pre-approval applications are not a guarantee of program acceptance. ComEd will review final applications for eligibility and completeness. Completed applications will be reviewed in the order received. Funds are reserved for the project when ComEd receives a complete pre-approval application and determines that the project meets the program eligibility requirements. Applicants who submit incomplete applications will be notified of deficiencies upon review of the application, and could lose their place in line in the review process until all requested information is received. Applicants are encouraged to call the program hotline if they have any questions about documentation requirements.

Inspections

ComEd reserves the right to inspect all projects to verify compliance with program rules and verify the accuracy of project documentation. This may include pre-installation and/or post-installation inspections, detailed lighting layout descriptions, metering, data collection, interviews and utility bill data analyses. The customer must allow access to project documents and the facility where the measures were installed for a period of five years after receipt of incentive payment by ComEd.

Requirements for Custom Project Electricity Savings Calculation

The annual electricity savings must be calculated for custom projects using industry accepted engineering algorithms or simulation models. The applicant must estimate the annual electricity usage of both the existing and proposed equipment based on the current operation of the facility. If the existing equipment is at the end of its useful life, the applicant must substitute equipment that would meet the applicable federal and local energy codes when calculating the annual energy savings.

The applicant must be able to clearly describe the method used to calculate the savings. The applicant must provide all assumptions used in the calculations and document the source for these assumptions.

The method and assumptions used by the applicant to calculate the annual savings will be reviewed by ComEd. ComEd is solely responsible for the final determination of the annual energy savings to be used in calculating the incentive amount. ComEd also reserves the right to require specific measurement and verification activities including monitoring both before and after the retrofit and to base the incentive payment on the results of these activities.

ComEd may need to conduct inspections both before and after the retrofit projects to verify equipment and operation conditions. The applicant is required to submit a pre-approval application while the existing equipment is still in operation to allow ComEd the opportunity to verify the existing equipment.

Tax Liability

Incentives are taxable and, if more than \$600, will be reported to the IRS unless the customer is tax exempt. ComEd is not responsible for any taxes that may be imposed on your business as a result of your receipt of this incentive.

Disclaimer

ComEd does not guarantee the energy savings and does not make any warranties associated with the measures eligible for incentives under this program. ComEd has no obligations regarding and does not endorse or guarantee any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures.

CUSTOM PROJECTS

Custom Incentive Levels

	Less than 5-Year Life or Energy Management System Programming	5-Year Life or Longer
Incentive	\$0.03/kWh	\$0.07/kWh
Minimum Payback Period	None	One year
Maximum Payback Period	< 5 years	< 7 years

Custom Projects Description

Facility Type

The project will be (please check all that apply): New equipment project Replacement of existing equipment

Is the existing equipment operational? Yes No

Was this project identified in a ComEd Retro-Commissioning Study? Yes No

PROJECT OVERVIEW:

Baseline or Existing Summary

Baseline System Description	Baseline Material Cost	Baseline Labor Cost
Please describe the specific application or measure for the baseline or existing system	Total material cost for measure	Total labor cost for measure
Check the appropriate box: <input type="checkbox"/> Theoretical Baseline <input type="checkbox"/> Existing System Theoretical baseline systems should represent standard practice <i>EXAMPLE:</i> Existing Uncontrolled Air Compressor System	(Enter "\$o" if retrofitting existing system) \$0.00	(Enter "\$o" if retrofitting existing system) \$0.00

Proposed System Summary

Proposed System Description	Proposed Material Cost	Proposed Labor Cost
<p>Please describe the specific application or measure for the proposed system. Proposed system must offer efficiency levels higher than the current practice design.</p> <p><i>EXAMPLE:</i> Install Air Compressor Controller</p>	<p>Total material cost for measure</p> <p>\$16,500.00</p>	<p>Total labor cost for measure</p> <p>\$5,200.00</p>

Calculation Method

Describe method used to calculate annual energy savings (attach applicable materials to support method):

Incentive Calculation

	Notes
Total Project Cost:	Internal labor costs are not to be included.
Annual Electric Savings (in kWh):	Incentive amount equals 7 cents per annual kWh saved for measures that have an expected life of 5 years or more and involve capital investment in new equipment. The incentive amount is 3 cents per annual kWh for projects that have an expected life of less than 5 years and for projects where the savings are due solely to energy management system programming.
Estimated Annual Electric Savings (in Dollars):	
Payback $\frac{\text{Total Project Costs}}{\text{Estimated Annual Electric Savings}}$:	Maximum allowable payback is 7 years.
Expected Measure Life (in Years):	
Incentive Amount: $\$0.03 \times \frac{\text{_____}}{\text{(kWh savings)}} = \$ \text{_____}$ $\$0.07 \times \frac{\text{_____}}{\text{(kWh savings)}} = \$ \text{_____}$ Total Proposed Incentives = \$ _____	Incentive cannot exceed 100 percent of the incremental cost and 50 percent of the total project cost. (See terms and conditions for definition of incremental cost.)

Detailed Instructions for Savings Calculation

Custom projects must involve measures that result in a reduction in electric energy due to an improvement in system efficiency. Projects resulting in reduced energy consumption without an improvement in system efficiency are not eligible for a custom incentive. However, projects that involve an automated control technology such as energy management system programming are eligible for an incentive. All projects must meet ComEd's cost-effectiveness requirements. Please see the Custom Incentive Table for incentive levels.

In order to be funded under this program, applications must be accompanied by project documentation. This

documentation should address the criteria necessary to achieve the energy savings estimated in the engineering analysis for this project. Relevant documentation may include: architectural drawings, component specification sheets, equipment efficiency rating documentation and, results from building simulation modeling. At the discretion of ComEd, additional documentation, other than that described in this application, may be required for program participation.

The following serves as guidelines for the minimum required documentation.

ENERGY PERFORMANCE AND DOCUMENTATION REQUIREMENTS

Provide calculations documenting the predicted energy consumption of the existing (or base) and proposed design using the appropriate analytical tools and clearly stated assumptions. Calculations may be performed by "hand" but spreadsheet analysis is preferred, and may be supplied in electronic format. All assumptions such as operating hours, existing and proposed equipment operational details must be presented. Use accepted engineering algorithms and procedures from recognized technical organizations such as ASHRAE, SMACNA, ANSI, etc. Use rated performance factors

tested under accepted procedures specified by recognized rating agencies such as ARI, ANSI, ASTM, etc. Provide an explanation when equipment performance rating conditions vary from standard conditions.

Provide any further documentation that helps to demonstrate the performance characteristics of the project. Please provide any measured data or monitored wherever possible.

SYSTEM PERFORMANCE RELATED TO STANDARD PRACTICE

To be awarded an incentive under this program, proposed process systems and equipment must outperform accepted standard practice. Standard practice can be defined as systems, equipment and operational approaches based on readily available equipment that is commonly installed today. The base case or standard practice systems should be

compared to proposed systems that serve a similar function and address the same load with like capacity. Please supply information documenting the accepted standard practice for the process, and demonstrate that the project will, and to what degree, outperform standard practice.

MINIMUM SUPPORTING DOCUMENTATION (Customer or Contractor: Please check upon completion)

- | | |
|---|---|
| <input type="checkbox"/> Project Description (if needed attach separate sheet): include scope of work from proposal, if applicable. | <input type="checkbox"/> List of System Requirements: pressure, flows, operating hours, control strategies (Attach separate sheets). |
| <input type="checkbox"/> Baseline or Existing System Summary: including make, model number, name plate information (such as operating voltage and rated full load amps), rated capacity, quantities, equipment condition and age, facility operating hours, equipment operating schedule, load curves (If needed, attach separate sheets). | <input type="checkbox"/> Energy Usage of the Existing and Proposed Systems: kW and kWh (attach separate calculation report). |
| <input type="checkbox"/> Proposed System Summary: including make, model number, name plate information (such as operating voltage and rated full load amps), rated capacity, quantities, life of measure, facility operating hours, equipment operating schedule, load curves (If needed, attach separate sheets). | |

INCENTIVES FOR CUSTOM PROJECTS

Do you have plans to replace existing equipment or add new equipment?

Could your current equipment or manufacturing process benefit from newer, more energy-efficient technologies not contained in the prescriptive incentives menu?

*Smart Ideas for Your Business*SM program offers custom incentives for a variety of equipment and process improvements that lead to electricity savings. Incentives are typically granted for implementing energy efficient improvements that exceed standard practice but are not available on the *Smart Ideas for Your Business* prescriptive measures menu.

The more electricity your project saves, the more your business can earn in incentives — up to 7 cents per kWh saved, up to a maximum of \$200,000.

ComEd's *Smart Ideas for Your Business* Custom Incentives Could:

- ✓ Help shorten the payback period associated with energy efficiency projects
- ✓ Lower your energy costs — and your carbon footprint — affording you more energy efficient technologies
- ✓ Increase your productivity by allowing you to purchase energy efficient machines and technologies that offer reduced maintenance requirements or servicing, and better reliability

Program Year Three Incentives and Payback Period Requirements

	Less than 5-Year Life or Energy Management System Programming	5-Year Life or Longer
Incentive	\$0.03/kWh	\$0.07/kWh
Minimum Payback Period	None	One year
Maximum Payback Period	< 5 years	< 7 years

Program Year Three Incentive Limits per Non-Residential Customer Facility

Prescriptive Incentives	100% of the calculated incentive up to \$100,000 50% of the calculated incentive above \$100,000 Maximum \$200,000 prescriptive incentive per program year
Custom Incentives	100% of the calculated incentive up to \$100,000 50% of the calculated incentive above \$100,000 Maximum \$200,000 custom incentive per program year
Total Incentive Limit	\$400,000 per program year

A wide range of electric equipment and process changes may qualify for *Smart Ideas for Your Business* custom incentives, including:

- ✓ **Compressed air technologies** – new equipment; properly sized, reduced hp compressors; compressed air storage systems; vacuum pumps
- ✓ **Controls** – CO₂ based ventilation, building management system programming, chilled water system upgrades
- ✓ **Cooling** – economizers, ventilation fans
- ✓ **Lighting** – LED outdoor lighting
- ✓ **Miscellaneous** – industrial process improvements
- ✓ **Motors & Drives** – Variable frequency drives (VFD) for individual motors greater than 200 hp
- ✓ **Refrigeration** – ammonia compressors, insulated freezer doors

Important Notes:

- ✓ ComEd requires pre-approval of your project before you purchase and install equipment. Applications will be accepted after June 1, 2010.
- ✓ Projects involving fuel switching, combined heat and power, or renewables are not eligible for incentives.
- ✓ ComEd's *Smart Ideas for Your Business* staff will calculate electricity (kWh) savings and pay incentives based on program eligibility and requirements.
- ✓ Incentives are available to all ComEd delivery service customers, regardless of retail electric supplier.
- ✓ Prescriptive measures do not qualify for custom incentives.

To Get Started

ComEd has created custom worksheets for Lighting, Compressed Air, HVAC, Energy Management Systems and Variable Frequency Drive projects. The worksheets will help you organize and submit the information we need to analyze your project. Visit www.ComEd.com/BizIncentives to download worksheets.

Be sure to visit www.ComEd.com/BizIncentives for the latest incentive information and applications, or call the *Smart Ideas* hotline at 888-806-2273.



5.2 Evaluation Data Sources

Table 5-1 provides a summary of the principal data sources contributing to the evaluation of the PY3 Custom Program. For each data element listed, the table provides the targeted population, the sample frame, the sample size, and the timing of data collection.

Table 5-1. Principal Data Sources Contributing to the PY3 Evaluation

Data Collection Type	Targeted Population	Sample Frame	Sample Design	Sample Size	Timing
Tracking Data Analysis	Custom Program Customers, Projects and Measures	ComEd Online Tracking Database	-	All	Ongoing
In-depth Phone Interviews	ComEd Custom Program Staff	Contact information from ComEd	C&I Custom Program Manager	1	May 2011
	Implementation Staff	Contact information from ComEd	KEMA Program Implementation Staff	1	August 2011
	ComEd Account Managers	ComEd Account Manager List	Purposeful sample of Account Managers triggered by participant NTG responses; plus random sample of others	5	September 2011
	Participating Market Actors	ComEd Trade Ally List	Mix of active and inactive market actors, as well as those who completed projects but are not a registered trade ally	15	September / October 2011
	Program staff of utilities with trade ally bonus	Literature Review	Census Attempt (N=10)	7	August/ September 2011
CATI Phone Survey	Custom Program Participants	Tracking Database	Census Attempt (N=200)	61*	August/ September 2011

Data Collection Type	Targeted Population	Sample Frame	Sample Design	Sample Size	Timing
	Non-Participants	ComEd Customer Database	Random Sample of non-participants, excluding small rate class	70	August 2011
Follow-up Calls	Custom Program Participants and Vendors	Selected Net-to-Gross Sample	Selected Projects Where Warranted	Selected Projects Where Warranted	September 2011
In-depth Interviews by Senior Consultant	Custom Program Participants	Tracking Database	Census Attempt (N=3)	3	July/September 2011
Project Application File Review	Projects in the Custom Program	Tracking Database	Stratified Random Sample by Custom Project-Level kWh (3 Strata)	32	May/September 2011
On-Site Visits and Measurement	Projects in the Custom Program	Tracking Database	Stratified Random Sample by Custom Project-Level kWh (3 Strata)	26	May/September 2011

**In addition to these 61 completed interviews, three respondents only completed the net-to-gross questions and three In-depth interviews were conducted by a Senior Consultant. Therefore, a total of 67 responses were available for the net impact analysis.*

5.3 *Other Appendices*

5.3.1 **Implementation Strategy**

Incentive Caps: Incentives are subject to annual limits or caps that are set per facility per year. A facility is defined as contiguous property for which a single customer is responsible for paying the ComEd electricity bill. The Custom incentive cap for PY3 ending May 31, 2011 is \$200,000 per facility.

Incentive Limits: Project incentives cannot exceed 50 percent of the total project cost (includes costs of equipment and contractor labor; excludes in-house labor) and 100 percent of the incremental measure cost.

Pre-approval Application Submittal: Pre-approval is required for all Custom applications to reserve funding.

Pre-Review: The program reviews pre-approval applications for eligibility and completeness. The program contacts the customer or contractor to clarify details or obtain further information, to discuss the overall process and timelines, and to explain the process for inspections where they are required.

Pre-Inspection: Pre-inspections provide the program with the opportunity to verify the existing conditions at the site. They are performed as defined by quality assurance procedures based on the type of measures that the participant submits.

Reservation: The program reserves the project funds once the pre-inspection report and/or initial project review is approved. In the event that a project is not completed within 90 days of the reservation and an extension has not been requested and granted, then the project is cancelled.

Final Application Submittal: The Final Application requires the submittal of documentation to demonstrate the installation of each energy efficiency improvement, including project invoices to document the costs to procure and install the project. Final applications must be submitted within 60 days of project completion and include the appropriate back-up documentation to verify the project is complete and meets the program requirements. ComEd reserves the right to request additional information from the sponsoring customer that demonstrates the effectiveness of the technology deployed. The program reviews final applications for eligibility and completeness.

Final Inspection: The program performs final inspections as defined by quality assurance/quality control procedures to verify the measure installations.

Incentive Payment: Once the program accepts a project for payment, incentives are processed and delivered.

Cancellation: When a project either does not meet the program guidelines or is cancelled by the customer, the project is moved to a cancelled status. The project details remain in the database, but the project no longer counts towards the active program goals.

Wait List: Custom projects were not placed on a waiting list in PY3. Projects might be wait listed if PY3 program funds were already committed. This would allow for a potential carry-over to PY4 for wait listed projects and give those projects priority placement in the reservation list.

Hold: Projects are placed on hold when a customer with a reserved project decides not to move forward in the current program year and indicates that they may move forward with their project in the following year. Projects on hold are not included in the active program totals.

5.3.2 Impact Evaluation Methods

Gross Program Savings

The objective of this element of the impact evaluation is to verify the veracity and accuracy of the PY3 ex ante gross savings estimates in the Custom program tracking system. The savings reported in ComEd's online tracking system were evaluated using an M&V approach in some instances and desk reviews in others. Additional information regarding the gross impact methods is shown below.

Selection of IPMVP Approach

Ex post gross annual energy and demand impacts were assessed using an array of methods that are compliant with and defined by the International Performance Measurement and Verification Protocols (IPMVP). Flexibility was also considered in applying these protocols, with an eye towards deployment of a cost-effective M&V approach (i.e., reduction in uncertainty per evaluation dollar spent). Choices include IPMVP Option A (retrofit isolation: key parameter measurement), Option B (retrofit isolation all parameter measurement), Option C (normalized annual consumption model or a fully specified regression model) and Option D (calibrated building energy simulation models).

Baseline Assessment

Development of baseline is a crucial step in accurately assessing custom measure ex post savings, and it is sometimes the case that the ex post evaluation-defined baseline does not agree with the program-defined baseline. In each case, an investigation is needed to determine whether the existing equipment was at the end of its life and whether there is an efficiency increment among new equipment available in the market. If the equipment is at the end of its

life and there is variation among new equipment efficiencies, then the savings should be based on the delta between the efficiency of the standard baseline equipment and program induced installation. If the equipment is at the end of its life (i.e., no evidence of program-induced early replacement) and there is little or no difference in efficiencies among new equipment choices, then the savings will essentially be zero. The evaluation acknowledges that early replacement activities would normally yield an array of annual (and peak demand) savings throughout the effective useful life (EUL) of the new equipment, involving impacts in the first series of years that reflect differences in usage versus the pre-existing system, and in later years versus the likely equipment adoption in the absence of the program (i.e., two different baselines might be applied). However, this evaluation seeks to identify the predominant baseline condition, and derive a single (representative) year estimate of annual and peak demand savings. The point here is to simply illustrate that baseline determination and analysis are an integral and extremely important part of custom impact evaluation, and to acknowledge the complexities involved in the actual grid-level impacts.

Production Adjustments

Changes in production between the pre-retrofit and post-retrofit periods must be accounted for in this evaluation. Changes in production have a direct impact on total energy usage and energy savings.

Guidelines in place for this evaluation requires energy savings calculations to be based on the pre retrofit production levels if the measure caused the change in production, on the other hand, if market demand causes a change in production, then post retrofit production levels would be used. Following these guidelines ensures that all the projects with production changes are addressed in a consistent manner.

Review Applications and Prepare Analysis Plans

For each selected application, an in-depth application review is performed to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. Application review serves to familiarize the assigned engineer with the gross impact approach applied in the program calculations. This also forms the basis for determining the additional data and monitoring needs that are required to complete each analysis and the likely sources for obtaining those analytic inputs. For most projects on-site sources include interviews that are completed at the time of the on-site, visual inspection of the systems and equipment, EMS data downloads, spot measurements, and short-term monitoring (e.g., less than four weeks). For some projects, data sources also include program implementers, interviews with

vendors and other Energy Efficiency Service Providers (EESPs)²⁷ that participated in a given project.

From the total of 32 gross impact sites analyzed in PY3, 19 projects utilized IPMVP Option A, and two projects each utilized IPMVP Option B and utilized IPMVP Option C. Three projects utilized a hybrid IPMVP approach (Option C whole facility billing analysis in conjunction with Option A). Additionally, desk reviews were performed to analyze six small lighting projects in PY3.

Each review results in a formal analysis plan. Each plan explains the general gross impact approach used (including monitoring plans), provides an analysis of the current inputs (based on the application and other available sources at that time), and identifies sources that will be used to verify data or obtain newly identified inputs for the ex post gross impact approach. Sometimes initial plans are adjusted to reflect actual in-field conditions. Where warranted the evaluation team refines the initial plan based on better/more information as each M&V site data collection and analysis effort develops. There are also situations where the favored data collection and analysis approach turns out to be infeasible – for example, if a site contact did not provide requested EMS trend data.

Schedule and Conduct On-Site Data Collection

On-site surveys are completed for each of the customer applications sampled. The engineer assigned to each project first calls to set up an appointment with the customer.

During the on-site audit, data identified in the analysis plan is collected, including monitoring records (such as instantaneous spot watt measurements for relevant equipment, measured temperatures, data from equipment logs and EMS/SCADA system downloads), equipment nameplate data, system operation sequences and operating schedules, and, of course, a careful description of site conditions that might contribute to baseline selection.

For the six desk review projects, the data collection will involve customer interviews to collect operating schedules, review invoices to confirm quantity of installed fixtures, use manufacturer data or the standard wattage tables to verify fixture wattages and review of ex ante calculations to verify the reported savings.

All engineers who conduct audits are trained and experienced in completing inspections for related types of projects. Each carries all equipment required to conduct the planned activities. They check in with the site contact upon arrival at the building, and check out with that same

²⁷ Energy Efficiency Service Providers are supply-side market actors that might assist customers in completing one or more tasks for a given project. This might include consultants, designers, vendors, contractors and energy services companies (ESCO's).

site contact, or a designated alternate, on departure. The on-site audit consists of a combination of interviewing and taking measurements. During the interview, the engineer meets with a building representative who is knowledgeable about the facility's equipment and operation, and asks a series of questions regarding operating schedules, location of equipment, and equipment operating practices. Following this interview, the engineer makes a series of detailed observations and measurements of the building and equipment. All information is recorded and checked for completeness before leaving the site.

Conduct Site-Specific Impact Calculations and Prepare Draft Site Reports

After all of the field data is collected, including any monitoring data, annual energy and demand impacts are developed based on the on-site data, monitoring data, application information, and, in some cases, billing or interval data. Each program engineering analysis is based on calibrated engineering models that make use of hard copy application review and on-site gathered information surrounding the equipment installed through the program (and the operation of those systems).

Energy and demand savings calculations are accomplished using methods that include short-term monitoring-based assessments, simulation modeling (e.g., DOE-2), bin models, application of ASHRAE methods and algorithms, analysis of pre- and post-installation billing and interval data, and other specialized algorithms and models.

For this study, peak hours are defined as non-holiday weekdays between 1:00 PM and 5:00 PM Central Prevailing Time (CPT) from June 1 to August 31. This is in accordance with the PJM manual 18, *Energy Efficiency and Verification*, of Mar 1 2010.

Peak demand savings for both baseline and post retrofit conditions are the average demand kW savings for the 1 pm to 5 pm weekday time period. If this energy savings measure is determined to have weather dependency then the peak kW savings are based on the zonal weighted temperature humidity index (WTHI) standard posted by PJM. The zonal WTHI is the mean of the zonal WTHI values on the days in which PJM peak load occurred in the past ten years. This mean WTHI value is 80.4. Demand savings is the difference in kW between the baseline and post retrofit conditions.

After completion of the engineering analysis, a site-specific draft impact evaluation report is prepared that summarizes the M&V plan, the data collected at the site, and all of the calculations and parameters used to estimate savings.

Quality Control Review and Final Site Reports

The focus of the engineering review is on the quality and clarity of the documentation and consistency and validity of the estimation methods.

Each draft site report including calculations underwent extensive senior engineer review, providing feedback to each assigned engineer for revisions or other improvements. Each assigned engineer then revised the draft reports as necessary to produce the final site reports.

5.3.3 Net Impact

Additional information regarding the net impact evaluation methodology is shown below.

Basic Free-Ridership Assessment

Free ridership was assessed using a customer self-report approach following a framework that was developed for evaluating net savings of California's 2006-2008 nonresidential energy efficiency programs. This method calculates free-ridership using data collected during participant phone surveys concerning the following three items:

A **Program Components** score that reflects the importance of various program and program related elements in the customer's decision and timing of the decision in selecting a specific program measure.

A **Program Influence** score that reflects the degree of influence the program had on the customer's decision to install the specified measures. This score is cut in half if they learned about the program after they decided to implement the measures.

A **No-Program** score that captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available. This score accounts for deferred free ridership by incorporating the likelihood that the customer would have installed program-qualifying measures at a later date if the program had not been available.

Each of these scores represents the highest response or the average of several responses given to one or more questions about the decision to install a program measure. The rationale for using the maximum value is to capture the most important element in the participant's decision making. This approach and scoring algorithm is identical to that used by the Ameren Illinois evaluators with the exact same questions.

The calculation of free-ridership for the Custom program is a multi-step process. The survey covers a battery of questions used to assess net-to-gross ratio for a specific end-use and site.

Responses are used to calculate a Program Components score, a Program Influence score and a No-Program score for each project covered through the survey. These three scores can take values of 0 to 10 where a lower score indicates a higher level of free-ridership. The calculation then averages those three scores to come up with a project-level net-to-gross ratio. If the customer has additional projects at other sites covering the same end-use, the survey asks

whether the responses also apply to the other projects. If that is the case, the additional projects are given the same score.

The scoring approach used to calculate free-ridership from data collected through participant phone surveys is summarized in Table 5-2.

Table 5-2. Basic Net-to-Gross Scoring Algorithm for the PY3 Custom Program

Scoring Element	Calculation
<p>Program Components score. The maximum score (on a scale of 0 to 10 where 0 equals not at all influential and 10 equals very influential) among the self-reported influence level the program had for:</p> <ul style="list-style-type: none"> A. Availability of the program incentive B. Technical assistance from utility or program staff C. Recommendation from utility or program staff D. Information from utility or program marketing materials E. Endorsement or recommendation by a utility account rep 	<p>Maximum of A, B, C, D, and E</p>
<p>Program Influence score. “If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?”</p>	<p>Points awarded to the program (divided by 10) Divide by 2 if the customer learned about the program AFTER deciding to implement the measure that was installed</p>
<p>No-Program score. “Using a likelihood scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely”, if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment?”</p> <p>Adjustments to the “likelihood score” are made for timing: “Without the program, when do you think you would have installed this equipment?” Free-ridership diminishes as the timing of the installation without the program moves further into the future.</p>	<p>Interpolate between No Program Likelihood Score and 10 where “At the same time” or within 6 months equals No Program score, and 48 months later equals 10 (no free-ridership)</p>
<p>Project-level Free-ridership (ranges from 0.00 to 1.00)</p>	<p>1 – Sum of scores (Program Components, Program Influence, No-Program)/30</p>
<p>PY3 Project level Net-to-Gross Ratio (ranges from 0.00 to 1.00)</p>	<p>1 – Project level Free-ridership</p>

Scoring Element	Calculation
Apply score to other end-uses within the same project?	If yes, assign score to other end-uses of the same project
Apply score to other projects of the same end-use?	If yes, assign score to same end-use of the additional projects

Standard Free-Ridership Assessment

For projects that receive greater program funding levels in excess of \$50,000, an effort is made during the customer telephone survey to more completely examine project influence sources in order to allow for any analyst-determined adjustments to customer self-reported score calculations using the Basic approach outlined above. Additional survey batteries examine other project decision-making influences including the vendor, age, and condition of existing equipment, corporate policy for efficiency improvements and so on. Any adjustments made on this basis are carefully documented and the rationale for any adjustments is provided, to ensure their transparency to the reviewer.

Additional Data Sources, Call-Backs and Free-Ridership Adjustments

All project free-ridership scores and responses (including open-ends) were carefully reviewed prior to finalization and, in certain instances, additional data sources were examined and follow-up calls were found to be warranted in order to finalize and adjust each free-ridership score. In those instances interviews were conducted for sampled projects with a selected representative of the program implementer to better understand the evolution of each project from concept to installation, and gather any knowledge concerning project implementation, including vendors, utility staff, program staff and other players that had participated. Callbacks were placed with the respondents to 1) resolve apparent discrepancy in responses, 2) obtain a clearer understanding of the equipment installation decision making, 3) examine the influence of corporate policy and 4) examine any other project influences. Calls were placed with the vendors associated with a given project where their customer-supplied importance scores (that is, project influence) warranted it; they were also done in cases where there was implementer or customer information provided that suggested the current net-to-gross ratio might significantly increase. Adjustments were made where warranted. Any adjustments made on this basis were carefully documented and the rationale for any adjustments is provided, to ensure their transparency to the reviewer.

Spillover

For the PY3 Custom program evaluation, a battery of questions was asked to assess spillover. Below are paraphrased versions of the spillover questions that were asked:

1. Since your participation in the ComEd program, did you implement any ADDITIONAL energy efficiency measures at this facility that did NOT receive incentives through any utility or government program?
2. What specifically were the measures that you implemented?
3. Why are you not expecting an incentive for these measures?
4. Why did you not install this measure through the ComEd Program?
5. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of these measures.
6. Please describe the EFFICIENCY of these measures.
7. Please describe the QUANTITY installed of these measures.
8. Were these measures specifically recommended by a program related audit, report or program technical specialist?
9. How significant was your experience in the ComEd Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant?
10. Why do you give the ComEd program this influence rating?
11. If you had not participated in the ComEd program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure?

Responses to these questions allow us to assess whether spillover may be occurring and the type of equipment involved, but do not offer enough detail to quantify the spillover.

5.3.4 Process Evaluation Methods

Six research activities were conducted in support of the process evaluation: (1) interviews with program and implementation staff, (2) in-depth interviews with participating market actors, (3) in-depth interviews with ComEd Account Managers, (4) a quantitative telephone survey with 61 participating customers, (5) a quantitative telephone survey with 70 non-participating customers, and (6) a literature review and utility staff interviews regarding upstream bonuses for trade allies. These activities are further described below.

Tracking Data

The tracking data delivered for this evaluation was extracted from a copy of the ComEd online database uploaded to the evaluation team SharePoint site on a periodic basis. The tracking data used to support this evaluation was uploaded on August 2, 2011. Half of the impact and survey samples were drawn from a database extract dated April 5, 2011 to allow an early start of the impact efforts; the second half of the samples were drawn from an extract dated July 13, 2011. The Custom measures show no substantive differences between the July 13, 2011 version and the final August 2, 2011 version.

Program and Implementer Staff Interviews

The evaluation team conducted one call with the Program Manager of the Custom Program. This call covered key changes to the program design and implementation for PY3. We also conducted an interview with staff members at KEMA responsible for program implementation and marketing strategies.

Account Manager Interviews

We conducted interviews with five ComEd Account Managers as part of the PY3 evaluation of the Smart Ideas for Your Business Program. The interviews focused on program awareness and customer interest and participation. The five interviewed Account Managers represent a mix in terms of the number of customers they represent and their customers' participation in the Smart Ideas for Your Business Program.

The interview guide is included in Appendix 5.4.1.

Market Actor Depth Interviews

We interviewed 15 market actors as part of the PY3 evaluation of the Custom Program. The interviews focused on (1) how the Smart Ideas for Your Business Program has affected business practices and market trends, (2) barriers to installation of energy efficient equipment and customer participation in the program, and (3) satisfaction with the program and participation processes.

Of the 15 interviewed market actors, 7 have completed projects in the Custom Program but are *not* a registered trade ally. The remaining 8 interviews represent a mix of high activity and low activity *registered* trade allies who participated in the Custom Program in PY3.

The interview guide is included in Appendix 5.4.2.

Interviews with Program Staff of Utilities with Trade Ally Bonus

The evaluation team conducted interviews with seven individuals presenting utility programs that have employed a trade ally bonus. These programs were identified through a literature review and included both residential and business programs.

The interview guide is included in Appendix 5.4.3.

CATI Phone Survey of Participating Customers

A Computer-Assisted Telephone Interviewing (CATI) survey was conducted with 61 participants in the Custom Program.²⁸ The survey was directed toward unique customer contact names drawn from the tracking system for PY3 paid Custom projects. This survey focused on two key areas: (1) questions to estimate net program impacts (quantitative assessment of free-ridership and qualitative assessment of spillover) and (2) questions to support the process evaluation. The survey was implemented in two waves: The first wave took place in June and July, the second in August and September. All 61 CATI interviews were completed by Opinion Dynamics Corporation's call center.

In addition, two interviews were conducted by a Senior Consultant using the same survey instrument. These interviews targeted the largest PY3 custom projects and focused on net impact questions (a subset of the process questions were also asked). While responses to the process questions could not be integrated into the CATI results, they were generally consistent with responses given by the 61 CATI interviewees.

The CATI survey instrument is included in Appendix 5.4.4.

CATI Phone Survey of Non-Participating Customers

A CATI survey was conducted with a random sample of non-participating customers. The survey excluded customers in the small rate class (C28 – customers with demand less than 100 kW). The survey included questions about barriers to participation, program awareness, customer decision making processes, and general energy efficiency behaviors and attitudes. All interviews were completed in August and September of 2011.

The survey instrument is included in Appendix 5.4.5.

5.4 Data Collection Instruments

5.4.1 Account Manager Interview Guide

²⁸ Three respondents terminated the interview after completing the net-to-gross module; as such, 64 completed CATI interviews were available for the net-to-gross analysis.

ComEd Smart Ideas for Your Business C&I Programs: Account Manager Interviews
FINAL

Hello, this is _____ from Opinion Dynamics. We are the independent contractor hired by ComEd to conduct the evaluation of the Smart Ideas for Your Business Program. We are doing a brief survey with ComEd Account Managers. We are interested in your experience with the <Prescriptive and/or Custom> Program and any feedback you may have received about the program from your customers.

Is now still a good time or is there a more convenient time when I could call back?

Alert interviewee that the call will be recorded.

Note that responses will remain confidential and only be reported in aggregate with other responses.

Background

1. How long have you been an Account Manager at ComEd?
2. What kind of customers do you serve? *[Probe for business sector, size, chains]* Approximately how many customers do you serve?
3. How frequently do you interact with your customers? What is the primary mode of communication? *[Probe for if they visit location, call, send out emails, letters]* Does this vary by customer type or size?

NTG Battery

4. According to our records <SCOMP> is a customer of yours who implemented a <EUSE> project through the Prescriptive Program at <ADDR>. Were you aware of their participation?
5. Did you ever promote the Smart Ideas for Your Business Program to <SCOMP>? How frequently did you discuss the program with them? *(Probe for when the first began discussing the program, use <DATE> as a reference point)*
6. Did you play a role in their decision to implement <EUSE> project? Please explain. From your perspective, what were the main factors in <SCOMP> decision to install high efficiency equipment and participate in the program?
 - a. If promote it/involved: Without your involvement, how likely would they have been to implement the project through the program? *(Probe for very likely, somewhat likely, not at all likely)*

Program Awareness

7. How familiar would you say you are with the Smart Ideas for Your Business Program? [*Probe: very, somewhat, not very, not at all familiar*]
8. Have you attended any lunch-and-learn presentations? How many? How useful did you find these presentations? How did you use the information from the Lunch N Learns? Please explain.
9. How often do you discuss energy efficiency with your customers? How often do you promote the program? Does this vary by customer type or size?
If not often: why not?
10. What do you find to be the best way to reach your customers about energy efficiency opportunities? Does this vary by customer type or size?
11. What information about the program do you typically provide? [*probe for fact sheets, case studies*]
If provide materials: How useful have you found these marketing materials to be? What could make them more useful?
12. Do you use the website as a resource for program information? Do you find that the materials on the website are easily accessible? Do you have any suggestions on how to make program materials more accessible?
13. Do you feel you have enough information about the program to effectively promote it and assist customers in getting started with their participation?
14. Is there anything that the program could do to help you be more effective in promoting the program? (*probe for better marketing materials, more training, ...*)
15. Did you attend last year's (2010) EE Expo? Did you promote the Expo to your customers? Did any of your customers attend the Expo?
 - a. Did you find this EE Expo useful in providing information to your customers or promoting the program? Are there any changes that would make it better in the future?
 - b. How about this year's (2011) Expo that just took place? Did you attend? Did you promote it to your customers? Did your customers attend? How useful was the Expo in providing information about the program?
16. Is there a formal process for tracking leads? Do you keep track of your communications with your customers with respect to the Smart Ideas program? Is this information passed along to Program staff?
 - a. Do you find this process is working? Why/Why not?

Customer Awareness/Interest/Participation

17. What percentage of your customers, do you think, are aware of the Smart Ideas for Your Business Program? What percentage is interested? Why or why not? Does this vary by customer type or size?
18. How aware are you of your customers' participation and status in the program? Do you find that the weekly updates are useful? Do they provide enough information? Do you prefer to get updates in any other way?
19. Approximately what percentage of your customers has participated in the Smart Ideas Program? Does this vary by customer type or size?
20. Have you gotten any feedback from customers about the Smart Ideas Program? What is the nature of that feedback? Does this vary by customer type or size?
21. In your view, what are the major barriers to participating in the Smart Ideas for Your Business program?
22. What are the major barriers to your customers in installing energy efficient equipment?
23. This was the first year that the program initiated goals for account executives. (*To bring customers to EE expo, bring in \$15 million in paid/reserved projects by Nov, and to attend a certain amount of lunch-and-learns*). Did you achieve these goals? How did you feel about these goals? Did you find them realistic?

Those are all the questions I had. Thank you very much for your time today!

5.4.2 Market Actor Depth Interview Guide

**Trade Ally Survey for the ComEd Prescriptive Program
FINAL**

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. THIS IS NOT A SALES CALL. We are doing a brief survey with program allies who have been involved in projects supported by the Smart Ideas for Your Business Program.

We are interested in your experience with the program and any feedback you may have received from your customers about the program. ComEd plans to use the information to improve the energy efficiency programs and services it offers to its business customers.

[If name does not match name on list] Who might be the best person to speak with about the Smart Ideas for Your Business Program?

[If name matches name on list] Would you be willing to speak with me for about 15 minutes? Is now a good time or is there a more convenient time when I could call back?

Alert interviewee that the call will be recorded.

Note that responses will remain confidential and only be reported in aggregate with other responses.

Firmographics

I first have a few general questions about your company.

- F1 What is your business category? (Probe for: contractor, engineer, ESCO, equipment vendor, architect)

- F2 What type of equipment, if any, would you say is your company's area of expertise? (Probe, if necessary: lighting, HVAC, refrigeration, motors, food service)
 - a. If multiple areas: What is the MAIN area? → [RECORD THIS AREA AS "ENDUSE"]
 - b. Approximately how many total commercial or industrial [ENDUSE] projects does your company implement in a typical year?

- F3 Approximately, how many employees does your company have? (Fewer than 5, 5-10, 11-50, over 50)

- F4 What are the key business sectors your company serves? (Probe for light/heavy industry, retail, office, restaurant, etc.)

Freeridership Module [ASK ONLY IF IDENTIFIED BY CUSTOMER]

I now have a few specific questions about your firm's recent involvement in <%CUSTOMER>'s installation of <%MEASURE> through the Smart Ideas for Your Business Program at <%ADDRESS> in <%MONTH/YEAR >.

FR1 <%CUSTOMER> has indicated that your firm was involved in the implementation of this project. Is this correct? Are you the person that is most knowledgeable about your firm's involvement in this project?

[IF NO, PROBE TO SEE IF THERE IS SOMEONE ELSE IN FIRM WHO MAY HAVE KNOWLEDGE OF THIS PROJECT, ELSE SKIP TO FR4]

FR2 Can you please describe your firm's role in the selection and installation of <%MEASURE> at <%CUSTOMER>'s facility? (Probe if firm merely supplied or installed equipment or if they had a role in selecting it. Probe about perceived level of influence firm's recommendation had on customer's choice.)

[IF NO ROLE IN SELECTING EQUIPMENT, SKIP TO FR4]

FR3a On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the PROGRAM, including incentives as well as program services and information, in influencing your decision to recommend that <%CUSTOMER> install the energy efficiency MEASURE at this time? [SCALE 0-10]

FR3b And using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM, including incentives as well as program services and information, had not been available, what is the likelihood that you would have recommended this specific MEASURE to <%CUSTOMER>? [SCALE 0-10]

FR4 Do you know of any other vendors that worked with <%CUSTOMER> during their implementation and/or installation of <%MEASURE>, for example engineers or designers? If so, do you have their name and phone number?

Market Trends & Effect of Program on Business

I now have a few questions about the market for commercial and industrial [ENDUSE] equipment and the influence of the Smart Ideas for Your Business Program on your business practices.

- M1 Over the last 12 months, approximately what percentage of your [ENDUSE] equipment sales in ComEd's service territory were energy efficient models?
- Of these energy efficiency models, approximately what percentage would qualify for incentives from the program?
 - And of the installations that would qualify for incentives, approximately what percentage did NOT receive an incentive? Why do you think they did not receive an incentive? *(Probe for other reasons, if only one is mentioned.)*
- M2 You just told me that about ___% of your [ENDUSE] sales involve high efficiency equipment. Has this percentage *changed* in the past three years? How? In other words, do more of your sales involve high efficiency equipment?
- If increase:
- How important was the Smart Ideas Program in this change? *(Probe for specific program components: incentives, training, program website, other program components.)*
 - How important are other factors not related to the program? What are these other factors? *(Probe for tax credits/gov't rebates, general EE awareness, change in codes or standards.)*
- M3 In what percent of sales situations do you recommend high efficiency [ENDUSE] products?
- [If not 100%] When you don't recommend high efficiency products, what are the reasons?
- M4 Has the frequency with which you recommend high efficiency [ENDUSE] equipment changed in the past three years? How?
- If change noted:
- How important was the Smart Ideas Program in this change? *(Probe for specific program components: incentives, training, program website, other program components.)*
 - How important are other factors not related to the program? What are these other factors? *(Probe for tax credits/gov't rebates, general EE awareness, change in codes or standards.)*
- M5 As a result of the Smart Ideas Program...
- have you changed the type of equipment you supply and sell?
 - have you changed any other business practices as a result of the program? *(Probe for: hired more staff, opened up new offices, changed marketing.)*
 - Has the program caused an increase in business?

- M6 How aware, would you say, are your customers of energy efficiency and options available to make their facilities more energy efficient? How interested would you say are they? (*Probe for very, somewhat, not very, not at all aware/interested*)
Has this (awareness/interest) changed over time?
- M7 What do you view as the main barriers to the installation of energy efficient equipment for your customers? Does this vary by customer type or size? Anything else? What could be done to overcome these barriers?

Process Module

- P1 How aware, would you say, are your customers of the Smart Ideas for Your Business program? How interested are they in it? Does this vary by customer type or size?
- P2 How frequently do you promote the program to your customers? (Always, most of the time, sometimes, rarely, never?) If sometimes/rarely/never: Why? Does this vary by customer type or size?
- P3 Have you received any marketing materials from the program? If so, what did you receive? (*Probe for fact sheets, case studies, The Wire newsletter, "toolkit" from training session*) Do you provide these materials to your customers?
- If yes: How useful do you think are these materials in providing information about the program and encouraging customers to participate? If not useful, what would make them more useful?
 - If no: why not?
 - Are there any specific promotional materials that you would like ComEd to provide? If yes, what are they (e.g., case studies, point-of-sale technical handouts, website tools/enhancements)?

[IF REGISTERED TRADE ALLY]

- P4 Our records show that you are a registered Trade Ally, is that correct?
- Last year, ComEd instituted new requirements for becoming a registered Trade Ally. These included attending the Basic training once a year and completing at least one project. How do you feel about these new requirements? Did your firm have any problems meeting the requirements?
 - Has the designation of "Trade Ally" changed any of your business practices? How?
 - What do you see as the main benefits of being a registered Trade Ally? (*Probe: marketing materials, listing on ComEd website, group training, application status, sales coaching, discount on technical training, eligibility for trade ally bonus*)

[IF NOT A REGISTERED TRADE ALLY]

- P5 Our records show that you are **not** a registered trade ally, is that correct?
- Last year, ComEd instituted new requirements for becoming a registered Trade Ally. These included attending the Basic training once a year and completing at least one project. Were you aware of these new restrictions? How do you feel about these new requirements?
 - Why has your company not registered to become a Trade Ally?
 - Are you planning on becoming a registered trade ally?
 - What, if any, do you see as the main benefits of being a registered Trade Ally? (*Probe: marketing materials, listing on ComEd website, group training, application status, sales coaching, discount on technical training*)
 - What Trade Ally benefits could the Smart Ideas Program add that may convince you to become a registered trade ally? (*Probe for trade ally bonus*)
- P6 Were you aware that ComEd offered trade ally bonuses in the fall of 2010, where registered trade allies were awarded a 5% bonus of the incentive amount for projects that received \$10,000 or more in incentives?

[IF REGISTERED TRADE ALLY]

If aware:

- Did your company receive a bonus?
 - Did the bonus offering lead to an increased promotion of the program on your behalf? Did it lead to any other changes in your business practices? Do you think it resulted in more or bigger projects?
 - How did you feel about the restrictions/rules of the bonus? Was the bonus amount adequate?
 - What changes, if any, would you make to a trade ally bonus offering to make it more effective at bringing in more large projects? (*Probe: timing of bonus, length of promotion*)
- P7 What do you view as the main barriers to customer participation in the Smart Ideas for Your Business program? What could be done to overcome these barriers?
- P8 How satisfied are you with your participation in the Smart Ideas for Your Business program? (*Ask very, somewhat, not very, not at all satisfied.*) If not very satisfied or not at all satisfied: why?
- measures offered
 - incentive amounts
 - communication with Smart Ideas program staff
 - the program overall

[ask if total # of proj<4]

- P9 Our records indicate that you only participated in [X] project(s) through the program between June 2010 and May 2011. Can you briefly describe what prevented you from more active participation?
- P10 Do you have any recommendations of how the Smart Ideas for Your Business Program could be improved?

This concludes our survey. On behalf of ComEd, thank you very much for your time today!

5.4.3 Trade Ally Bonus Interview Guide

**ComEd Process Evaluation:
In-Depth Interview Guide: Literature Review of Trade Ally Bonus Programs**

August 16, 2011 FINAL

Name of Interviewee: _____ Date: _____
Title: _____ Utility/Program: _____

[Note to Reviewer] The Interview Guide is a tool to guide in-depth interviews with utility staff to understand more about the bonuses/incentives offered to trade allies. 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 Opinion Dynamics. We are part of the team that is conducting the evaluation of ComEd's Energy Efficiency programs. As part of our evaluation, we are researching programs that offer upstream bonuses or incentives to trade allies or contractors to incentivize their recruitment of program participants and applications. We have identified [INSERT NAME OF UTILITY PROGRAM] as offering such a bonus and would like to ask you some questions about the program. The questions will take less than 15 minutes. Is this a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

Screener

1. Our research indicates that your program offers a trade ally or contractor bonus, paid directly to that trade ally/contractor. Is this correct?
2. *If no:* Did you offer a bonus of this type during a previous program year?

IF NO to BOTH, THANK AND TERMINATE

Description of Bonus Offering

3. CONFIRM NAME OF PROGRAM AND RESIDENTIAL/COMMERCIAL
4. Could you briefly describe the process by which a contractor in your service area becomes a trade ally? What are the requirements for becoming a trade ally? What are the benefits for trade allies?
5. Do you have different kinds of trade allies, or different levels for trade allies?
6. Approximately how many trade allies do you have who are eligible for this bonus program?
7. Can you explain eligibility requirements for trade allies/contractors to receive the bonus? (*Probe: Do contractors have to be "registered" with the program to be eligible?*)
8. How long have you offered this bonus to trade allies/contractors? Is it a permanent offering or was it offered for a limited time? *If limited time:* For how long? What months? When in the program year?
9. Can you describe the bonus structure? (*Probe: What is the bonus or incentive amount offered to trade allies? Does it vary based on overall incentive amount of the project? Does it vary based on project size/estimated savings? Is it limited to specific measures? If so, what measures?*)
10. What was the main reason for offering this bonus? What were the main outcomes the program was hoping to achieve? (*Probe for: attract more projects, larger projects, projects of different type*)

Success of Bonus Offering

11. Approximately, what percentage of applications received a trade ally bonus? What percentage of trade allies/participating contractors took advantage of the bonus?
12. In your opinion, how successful has the bonus/incentive been? Do you think it has motivated trade allies/contractors to be more active in promoting the program? Please explain. Has it met its objectives?
13. *If very successful:* What do you think was the key to making this successful?
14. Is there anything that could have been done differently to make the bonus offering more successful?
15. What kind of feedback have you received from trade allies/contractors about this offering?

16. Have any evaluations been conducted which analyzed the impact of the trade ally/contractor bonus program?
If so, is the evaluation publicly available? Can we obtain a copy?
If not publicly available: Can you briefly summarize the findings of that analysis?
17. Will you be continuing the program/offering the same or similar incentive in the next project year? If not, why not?
18. What advice, if any, would you have for a manager of a C&I program thinking about offering a trade ally bonus?

Thank you very much for taking the time to speak with me.

5.4.4 Phone Survey of Participating Customers

COMED SMART IDEAS FOR YOUR BUSINESS PROGRAM

PARTICIPANT SURVEY – CUSTOM PROJECTS

PY3 FINAL

INTRODUCTION

[READ IF CONTACT=1]

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. This is not a sales call. May I please speak with <PROGRAM CONTACT>?

Our records show that <COMPANY> purchased <ENDUSE>, which was recently installed and received an incentive from ComEd. We are calling to do a follow-up study about <COMPANY>'s participation in this program, which is called the Smart Ideas for Your Business Program. I was told you're the person most knowledgeable about this project. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 15 minutes. Is now a good time? [If no, schedule call-back]

[READ IF CONTACT=0]

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. I would like to speak with the person most knowledgeable about recent changes in cooling, lighting, or other energy-related equipment for your firm at this location.

[IF NEEDED] Our records show that <COMPANY> purchased <ENDUSE>, which was recently installed and received an incentive from ComEd. We are calling to do a follow-up study about your firm's participation in this program, which is called the Smart Ideas for Your Business Program. I was told you're the person most knowledgeable about this project. Is that correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 15 minutes. Is now a good time? [If no, schedule call-back]

SCREENING QUESTIONS

- A1. Just to confirm, between June 1, 2010 and May 31, 2011 did <COMPANY> participate in ComEd's Smart Ideas for Your Business Program at <ADDRESS>? (IF NEEDED: This is a program where your business received an incentive for installing one or more energy-efficient products covered under the program.)
- 1 (Yes, participated as described)
 - 2 (Yes, participated but at another location)
 - 3 (NO, did NOT participate in program)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

[SKIP A2 IF A1=1,2]

- A2. Is it possible that someone else dealt with the energy-efficient product installation?
- 1 (Yes, someone else dealt with it)
 - 2 (No)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

[IF A2=1, ask to be transferred to that person. If not available, thank and terminate. If available, go back to A1]

[IF A1=2, 3, 00, 98, 99: Thank and terminate. Record dispo as "Could not confirm participation".]

Before we begin, I want to emphasize that this survey will only be about the <ENDUSE> you installed through the Smart Ideas for Your Business Program at <ADDRESS>. [IF NECESSARY, READ PROJECT DESCRIPTION: <PROJDESC>]

PY2 NET-TO-GROSS MODULE

Variables for the net-to-gross module:

<NTG> (B=Basic rigor level, S= Standard rigor level. All questions here are asked if the standard rigor level is designated. Basic rigor level is designated through skip patterns)

<UTILITY> (ComEd or Ameren Illinois Utilities)

<PROGRAM> (Name of energy efficiency program)

<ENDUSE> (Type of measure installed; from program tracking dataset)

<VEND1> (Contractor who installed new equipment, from program tracking dataset)

<TECH_ASSIST> (If participant conducted Feasibility Study, Audit, or received Technical Assistance through the program; from program tracking database)

<OTHERPTS> (Variable to be calculated based on responses. Equals 1- minus response to N3p.)

<FINCRIT1> (Variable to be calculated based on responses. Equals 1 if payback period WITHOUT incentive is shorter than company requirement. See instructions below.)

<FINCRIT2> (Variable to be calculated based on responses. Equals 1 if payback period WITH incentive is shorter than company requirement. See instructions below.)

<MSAME> (Equals 1 if same customer had more than one project of the same measure type; from program tracking database)

<NSAME> (Number of additional projects of the same measure type implemented by the same customer; from program tracking database)

<FSAME> (Equals 1 if same customer also had a project of a different measure type at the same facility; from program tracking database)

<FDESC> (Type of project of a different measure type at the same facility; from program tracking database)

VENDOR INFORMATION

[SKIP TO V4 IF NTG=B]

I would like to get some information on the VENDORS that may have helped you with the implementation of this equipment.

- V1 Did you work with a contractor or vendor that helped you with the choice of this equipment?
- 1 (Yes)
 - 2 (No)
 - 8 (Don't Know)
 - 9 (Refused)

[SKIP TO V4 IF V1=2, 8, or 9]

V2 BLANK

- V3 Did you also use a DESIGN or CONSULTING Engineer?
- 1 (Yes)
 - 2 (No)
 - 8 (Don't know)
 - 9 (Refused)
- V4 Did your utility account manager assist you with the project that you implemented through the <UTILITY> <PROGRAM>?
- 1 (Yes)
 - 2 (No, don't have a utility account manager)
 - 3 (No, have a utility account manager but they weren't involved)
 - 8 (Don't know)
 - 9 (Refused)

NET-TO-GROSS BATTERY

I'd now like to ask a few questions about the <ENDUSE> you installed through the program.

- N1 When did you first learn about <UTILITY>'s Program? Was it BEFORE or AFTER you first began to THINK about implementing this measure? (NOTE TO INTERVIEWER: "this measure" refers to the specific energy efficient equipment installed through the program.)
- 1 (Before)
 - 2 (After)
 - 8 (Don't know)
 - 9 (Refused)

[ASK N2 IF N1=2, 8, 9]

- N2 Did you learn about <UTILITY>'s Program BEFORE or AFTER you DECIDED to implement the measure that was installed? (NOTE TO INTERVIEWER: "the measure" refers to the specific energy efficient equipment installed through the program.)
- 1 (Before)
 - 2 (After)
 - 8 (Don't know)
 - 9 (Refused)

- N3 Next, I'm going to ask you to rate the importance of the program as well as other factors that might have influenced your decision to implement this measure. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to implement the measure at this time. [FOR N3a-n, RECORD 0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(If needed: How important in your DECISION to implement the project was...)

[SKIP N3a IF NTG=B]

N3a. The age or condition of the old equipment

N3b. Availability of the PROGRAM incentive

[ASK IF N3b=8, 9, 10]

N3bb. Why do you give it this rating? [OPEN END; 98=Don't know; 99=Refused]

[SKIP TO N3f IF NTG=B]

[ASK IF <TECH_ASSIST>=1, ELSE SKIP TO N3d]

N3c. Information provided through the technical assistance you received from <UTILITY> or KEMA field staff

[SKIP N3cc IF NTG=B]

[ASK IF N3c=8, 9, 10]

N3cc. Why do you give it this rating? [OPEN END; 98=Don't know; 99=Refused]

[ASK N3d IF V1=1]

N3d. Recommendation from an equipment vendor or contractor that helped you with the choice of the equipment

N3e. Previous experience with this type of equipment

N3f. Recommendation from a <UTILITY> program staff person

[SKIP N3ff IF NTG=B]

[ASK N3ff IF N3f=8, 9, 10]

N3ff. Why do you give it this rating?

N3h. Information from <PROGRAM> or <UTILITY> marketing materials

[SKIP N3hh IF NTG=B]

[ASK IF N3h=8, 9, 10]

N3hh. Why do you give it this rating?

[SKIP TO N3k IF NTG=B]

[ASK N3i IF V3=1]

N3i. A recommendation from a design or consulting engineer

N3j. Standard practice in your business/industry

[SKIP N3k IF V4>1]

N3k. Endorsement or recommendation by a <UTILITY> account manager

[SKIP N3kk IF NTG=B]

[ASK IF N3k=8, 9, 10]

N3kk. Why do you say that?

[SKIP TO N3n IF NTG=B]

N3l. Corporate policy or guidelines

N3m. Payback on the investment

N3n. Were there any other factors we haven't discussed that were influential in your decision to install this MEASURE?

- 00 [Record verbatim]
- 96 (Nothing else influential)
- 98 (Don't Know)
- 99 (Refused)

[ASK N3nn IF N3n=00]

N3nn. Using the same zero to 10 scale, how would you rate the influence of this factor? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

Thinking about this differently, I would like you to compare the importance of the PROGRAM with the importance of other factors in implementing the <ENDUSE> project.

[SKIP TO N3p IF NTG=B]

[READ IF (N3A, N3D, N3E, N3I, N3J, N3L, N3M, OR N3N)=8,9,10; ELSE SKIP TO N3p]

You just told me that the following other factors were important:

[READ IN ONLY ITEMS WHERE THEY GAVE A RATING OF 8 or higher]

- (N3A) Age or condition of old equipment,
- (N3D) Equipment Vendor recommendation
- (N3E) Previous experience with this measure
- (N3I) Recommendation from a design or consulting engineer
- (N3J) Standard practice in your business/industry
- (N3L) Corporate policy or guidelines
- (N3M) Payback on investment
- (N3N) Other factor

N3p If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?
Points given to program: [RECORD 0 to 100; 998=Don't Know; 999=Refused]

[CALCULATE VARIABLE "OTHERPTS" AS: 100 MINUS N3p RESPONSE; IF N3p=998, 999, SET OTHERPTS=BLANK]

N3o And how many points would you give to other factors? [RECORD 0 to 100; 998=Don't Know; 999=Refused] [The response should be <OTHERPTS> because both numbers should equal 100. If response is not <OTHERPTS> ask INC1]

INC1 The last question asked you to divide a TOTAL of 100 points between the program and other factors. You just noted that you would give <N3p RESPONSE> points to the program. Does that mean you would give <OTHERPTS> points to other factors?

- 1 (Yes)
- 2 (No)
- 98 (Don't know)
- 99 (Refused)

[IF INC1=2, go back to N3p]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE SCORE

[ASK IF (N3p>69 AND ALL OF (N3b, N3c, N3f, N3h, AND N3k)=0,1,2,3), ELSE SKIP TO N4aa]

N4 You just gave <N3p RESPONSE> points to the importance of the program, I would interpret that to mean that the program was quite important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were not that important to you. Just to make sure I have recorded this properly, I have a couple questions to ask you.

N4a When asked about THE AVAILABILITY OF THE PROGRAM INCENTIVE, you gave a rating of ...<N3B RESPONSE> ... out of ten, indicating that the program incentive was not that important to you. Can you tell me why the incentive was not that important?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[SKIP N4b IF NTG=B OR<TECH ASSIST>=0]

N4b When I asked you about THE INFORMATION PROVIDED THROUGH THE TECHNICAL ASSISTANCE, you gave a rating of ...<N3C RESPONSE> ... out of ten, indicating that the information provided

was not that important to you. Can you tell me why the information provided was not that important?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

N4c When I asked you about THE RECOMMENDATION FROM A <UTILITY> PROGRAM STAFF PERSON, you gave a rating of ...<N3F RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me why the information provided was not that important?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

N4d When asked about THE INFORMATION from the <PROGRAM> or <UTILITY> MARKETING MATERIALS, you gave a rating of ...<N3H RESPONSE> ... out of ten, indicating that this information from the program or utility marketing materials was not that important to you. Can you tell me why this information was not that important?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[SKIP N4e IF V4>1 or N3k=96,98,99]

N4e When asked about THE ENDORSEMENT or RECOMMENDATION by YOUR UTILITY ACCOUNT MANAGER, you gave a rating of <N3K RESPONSE> ... out of ten, indicating that this Account manager endorsement was not that important to you. Can you tell me why this endorsement was not that important?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[ASK IF N3p<31 AND ANY ONE OF (N3b, N3c, N3f, N3h, OR N3k=8,9,10) ELSE SKIP TO N5]

N4aa You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was not very important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were very important to you. Just to make sure I understand, would you explain why the program was not very important in your decision to install this equipment?

Now I would like you to think about the action you would have taken with regard to the installation of this equipment if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely”, if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [RECORD 0 to 10; 98=Don't know; 99=Refused]

CONSISTENCY CHECKS

[ASK N5a-d IF N3b=8,9,10 AND N5=7,8,9,10]

N5a When you answered ...<N3B RESPONSE> ... for the question about the influence of the incentive, I would interpret that to mean that the incentive was quite important to your decision to install. Then, when you answered <N5 RESPONSE> for how likely you would be to install the same equipment without the incentive, it sounds like the incentive was not very important in your installation decision.

I want to check to see if I am misunderstanding your answers or if the questions may have been unclear. Will you explain the role the incentive played in your decision to install this efficient equipment?

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

N5b Would you like for me to change your score on the importance of the incentive that you gave a rating of <N3B RESPONSE> or change your rating on the likelihood you would install the same equipment without the incentive which you gave a rating of <N5 RESPONSE> and/or we can change both if you wish?

1 (Change importance of incentive rating)

2 (Change likelihood to install the same equipment rating)

3 (Change both)

4 (No, don't change)

8 (Don't know)

9 (Refused)

[ASK IF N5b=1,3]

N5c How important was... availability of the PROGRAM incentive? (IF NEEDED: in your DECISION to implement the project) [Scale of 0 to 10, where 0 means not at all important and 10 means extremely important; 98=Don't know, 99=Refused]

[ASK IF N5b=2,3]

N5d If the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [Scale of 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely"; 98=Don't know, 99=Refused]

[ASK IF N3j>7]

N6 In an earlier question, you rated the importance of STANDARD PRACTICE in your industry very highly in your decision making. Could you please rate the importance of the PROGRAM, relative to this standard industry practice, in influencing your decision to install this measure. Would you say the program was much more important, somewhat more important, equally important, somewhat less important, or much less important than the standard practice or policy?

- 1 (Much more important)
- 2 (Somewhat more important)
- 3 (Equally important)
- 4 (Somewhat less important)
- 5 (Much less important)
- 8 (Don't know)
- 9 (Refused)

[ASK IF N5>0, ELSE SKIP TO N8]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same equipment if the program had not been available. Without the program, when do you think you would have installed this equipment? Would you say...

- 1 At the same time
- 2 Earlier
- 3 Later
- 4 (Never)
- 8 (Don't know)
- 9 (Refused)

[ASK N7a IF N7=3]

N7a. How much later would you have installed this equipment? Would you say...

- 1 Within 6 months?
- 2 6 months to 1 year later
- 3 1 - 2 years later
- 4 2 - 3 years later?
- 5 3 - 4 years later?
- 6 4 or more years later
- 8 Don't know
- 9 Refused

[ASK N7b IF N7a=6]

- N7b. Why do you think it would have been 4 or more years later?
00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

PAYBACK BATTERY [ASK N8-N10e IF N3m=6,7,8,9,10]

I'd like to find out more about the payback criteria <COMPANY> uses for its investments.

- N8 What financial calculations does <COMPANY> make before proceeding with installation of a MEASURE like this one?
00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

- N9 What is the payback cut-off point <COMPANY> uses (in months) before deciding to proceed with an investment? Would you say...
1 0 to 6 months
2 7 months to 1 year
3 more than 1 year up to 2 years
4 more than 2 years up to 3 years
5 more than 3 years up to 5 years
6 Over 5 years
8 (Don't know)
9 (Refused)

- N10a What was the estimated payback period for the new <ENDUSE>, in months, WITH the incentive from the <PROGRAM>?
00 [NUMERIC OPEN END, UP TO 240]
998 (Don't know)
999 (Refused)

- N10b And what was the estimated payback period for the <ENDUSE>, in months, WITHOUT the incentive from the <PROGRAM>?
00 [NUMERIC OPEN END, UP TO 240]
998 (Don't know)
999 (Refused)

[CREATE VARIABLE FINCRIT1. SET FINCRIT1 = BLANK IF: N9=8,9 OR N10b=998,999. SET FINCRIT1 = 1 IF: (N9=1 AND N10b<7) OR (N9=2 AND N10b<13) OR (N9=3 AND N10b<25) OR (N9=4 AND N10b<37) OR (N9=5 AND N10b<61) OR (N9=6). ELSE, SET FINCRIT1 = 0.]

[ASK N10c IF FINCRIT1=1]

N10c Even without the incentive, the <ENDUSE> project met <COMPANY>'s financial criteria. Would you have gone ahead with it even without the incentive?

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

[CREATE VARIABLE FINCRIT2. SET FINCRIT2 = BLANK IF: N9=8,9 OR N10a=998,999. SET FINCRIT2 = 1 IF: (N9=1 AND N10a<7) OR (N9=2 AND N10a<13) OR (N9=3 AND N10a<25) OR (N9=4 AND N10a<37) OR (N9=5 AND N10a<61) OR (N9=6). ELSE, SET FINCRIT2 = 0.

[ASK N10d IF FINCRIT2=1 AND FINCRIT1=0 AND N3b=0,1,2,3,4]

N10d The incentive seemed to make the difference between meeting your financial criteria and not meeting them, but you are saying that the incentive didn't have much effect on your decision, why is that?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[ASK N10e IF FINCRIT2=0 AND N3b=8,9,10]

N10e. The incentive didn't cause this <ENDUSE> project to meet <COMPANY>'s financial criteria, but you said that the incentive had an impact on the decision to install the <ENDUSE>. Why did it have an impact?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

CORPORATE POLICY BATTERY [ASK N11-N17 IF N3L=6,7,8,9,10]

N11 Does your organization have a corporate environmental policy to reduce environmental emissions or energy use? Some examples would be to "buy green" or use sustainable approaches to business investments.

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

[ASK N12-N17 IF N11=1]

N12 What specific corporate policy influenced your decision to adopt or install the <ENDUSE> through the <UTILITY> program?

00 [RECORD VERBATIM]

98 (Don't know)

99 (Refused)

N13 Had that policy caused you to adopt energy efficient <ENDUSE> at this facility before participating in the <UTILITY> program?

1 (Yes)

2 (No)

8 (Don't know)

9 (Refused)

N14 Had that policy caused you to adopt energy efficient <ENDUSE> at other facilities before participating in the <UTILITY> Program?

1 (Yes)

2 (No)

8 (Don't know)

9 (Refused)

[ASK N15-N16 IF N13=1 OR N14=1]

N15 Did you receive an incentive for a previous installation of <ENDUSE>?

1 (Yes)

2 (No)

8 (Don't know)

9 (Refused)

[ASK N16 IF N15=1]

N16 To the best of your ability, please describe.... [Record VERBATIM; 98=Don't know; 99=Refused]

a. the amount of incentive received

b. the approximate timing

c. the name of the program that provided the incentive

[ASK N17 IF N13=1 OR N14=1]

N17 If I understand you correctly, you said that <COMPANY> 's corporate policy has caused you to install energy efficient <ENDUSE> previously at this and/or other facilities. I want to make sure I fully understand how this corporate policy influenced your decision versus the <UTILITY> program. Can you please clarify that?

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

STANDARD PRACTICE BATTERY [ASK N18-N22 IF N3j=6,7,8,9,10]

N18 Approximately, how long has use of energy efficient <ENDUSE> been standard practice in your industry?

M [00 Record Number of Months; 98=Don't know, 99=Refused]

Y [00 Record Number of Years; 98=Don't know, 99=Refused]

N19 Does <COMPANY> ever deviate from the standard practice?

1 (Yes)

2 (No)

8 (Don't know)

9 (Refused)

[ASK IF N19=1]

N19a Please describe the conditions under which <COMPANY> deviates from this standard practice.

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

N20 How did this standard practice influence your decision to install the <ENDUSE> through the <PROGRAM>?

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

N20a Could you please rate the importance of the <PROGRAM>, versus this standard industry practice in influencing your decision to install the <ENDUSE>. Would you say the <PROGRAM> was...

1 Much more important

2 Somewhat more important

3 Equally important

4 Somewhat less important

5 Much less important

8 (Don't know)

9 (Refused)

N21 What industry group or trade organization do you look to to establish standard practice for your industry?

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

- N22 How do you and other firms in your industry receive information on updates in standard practice?
- 00 [Record VERBATIM]
 - 98 (Don't know)
 - 99 (Refused)

DESIGN ASSISTANCE

- N23 Who provided the most assistance in the design or specification of the <ENDUSE> you installed through the <PROGRAM>? (If necessary, probe from the list below.)
- 1 (Designer)
 - 2 (Consultant)
 - 3 (Equipment distributor)
 - 4 (Installer)
 - 5 (<UTILITY> account manager)
 - 6 (<PROGRAM> staff)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

[SKIP N24 IF N23=98, 99]

- N24 Please describe the type of assistance that they provided.
- 00 Record VERBATIM
 - 98 Don't know
 - 99 Refused

ADDITIONAL PROJECTS

[ASK N26 IF MSAME=1]

Our records show that <COMPANY> also received an incentive from <UTILITY> for <NSAME> other <ENDUSE> project(s).

- N26 Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from <UTILITY> or did each project go through its own decision process?
- 1 (Single Decision)
 - 2 (Each project went through its own decision process)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

[ASK N27 IF FSAME=1 ELSE SKIP TO SPILLOVER MODULE]

Our records show that <COMPANY> also received an incentive from <UTILITY> for a <FDESC> project at < ADDRESS >.

N27 Was the decision making process for the <FDESC> project the same as for the <ENDUSE> project we have been talking about?

- 1 (Same decision making process)
- 2 (Different decision making process)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

PY2 SPILLOVER MODULE

Thank you for discussing the new <ENDUSE> that you installed through the <PROGRAM>. Next, I would like to discuss any energy efficient equipment you might have installed OUTSIDE of the program.

SP1 Since your participation in the <UTILITY> program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within ComEd's service territory that did NOT receive incentives through any utility or government program?

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

[ASK SP2-SP7i IF SP1=1, ELSE SKIP TO S0]

SP2 What was the first measure that you implemented? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 (Lighting: T8 lamps)
- 2 (Lighting: T5 lamps)
- 3 (Lighting: Highbay Fixture Replacement)
- 4 (Lighting: CFLs)
- 5 (Lighting: Controls / Occupancy sensors)
- 6 (Lighting: LED lamps)
- 7 (Cooling: Unitary/Split Air Conditioning System)
- 8 (Cooling: Room air conditioners)
- 9 (Cooling: Variable Frequency Drives (VFD/VSD) on HVAC Motors)
- 10 (Motors: Efficient motors)
- 11 (Refrigeration: Strip curtains)
- 12 (Refrigeration: Anti-sweat controls)
- 13 (Refrigeration: EC motor for WALK-IN cooler/freezer)
- 14 (Refrigeration: EC motor for REACH-IN cooler/freezer)
- 00 (Other, specify)
- 96 (Didn't implement any measures)
- 98 (Don't know)
- 99 (Refused)

[SKIP TO S0 IF SP2=96, 98, 99]

SP3 What was the second measure? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 (Lighting: T8 lamps)
- 2 (Lighting: T5 lamps)
- 3 (Lighting: Highbay Fixture Replacement)
- 4 (Lighting: CFLs)
- 5 (Lighting: Controls / Occupancy sensors)
- 6 (Lighting: LED lamps)
- 7 (Cooling: Unitary/Split Air Conditioning System)
- 8 (Cooling: Room air conditioners)
- 9 (Cooling: Variable Frequency Drives (VFD/VSD) on HVAC Motors)
- 10 (Motors: Efficient motors)
- 11 (Refrigeration: Strip curtains)
- 12 (Refrigeration: Anti-sweat controls)
- 13 (Refrigeration: EC motor for WALK-IN cooler/freezer)
- 14 (Refrigeration: EC motor for REACH-IN cooler/freezer)
- 00 (Other, specify)
- 96 (There was no second measure)
- 98 (Don't know)
- 99 (Refused)

[SKIP SP4 IF SP3=96, 98, 99]

SP4 What was the third measure? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 (Lighting: T8 lamps)
- 2 (Lighting: T5 lamps)
- 3 (Lighting: Highbay Fixture Replacement)
- 4 (Lighting: CFLs)
- 5 (Lighting: Controls / Occupancy sensors)
- 6 (Lighting: LED lamps)
- 7 (Cooling: Unitary/Split Air Conditioning System)
- 8 (Cooling: Room air conditioners)
- 9 (Cooling: Variable Frequency Drives (VFD/VSD) on HVAC Motors)
- 10 (Motors: Efficient motors)
- 11 (Refrigeration: Strip curtains)
- 12 (Refrigeration: Anti-sweat controls)
- 13 (Refrigeration: EC motor for WALK-IN cooler/freezer)
- 14 (Refrigeration: EC motor for REACH-IN cooler/freezer)
- 00 (Other, specify)
- 96 (There was no third measure)
- 98 (Don't know)
- 99 (Refused)

SP5 I have a few questions about the FIRST measure that you installed. (If needed, read back measure: <SP2 RESPONSE>) [OPEN END]

- a. Why did you not receive an incentive for this measure?
- b. Why did you not install this measure through the <UTILITY> Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP5f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

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

SP5g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP5h IF SP5g = 98, 99]

SP5h. Why do you give it this rating? [OPEN END]

SP5i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC1a IF SP5g=0,1,2,3 AND SP5i =0,1,2,3]

CC1a When you answered ...<SP5g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[ASK CC1b IF SP5g=8,9,10 AND SP5i =8,9,10]

CC1b When you answered ...<SP5g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[SKIP SP6-SP7i IF SP3=96, 98, 99]

SP6 I have a few questions about the SECOND measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

- a. Why did you not receive an incentive for this measure?
- b. Why did you not install this measure through the <UTILITY> Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP6f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

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

SP6g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6h IF SP6g = 98, 99]

SP6h. Why do you give it this rating? [OPEN END]

SP6i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC2a IF SP6g=0,1,2,3 AND SP6i =0,1,2,3]

CC2a When you answered ...<SP6g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[ASK CC2b IF SP6g=8,9,10 AND SP6i =8,9,10]

CC2b When you answered ...<SP6g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[SKIP SP7 – SP7i IF SP4=96, 98, 99]

SP7 I have a few questions about the THIRD measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

- a. Why did you not receive an incentive for this measure?
- b. Why did you not install this measure through the <UTILITY> Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP7f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

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

SP7g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP7h IF SP7g = 98, 99]

SP7h. Why do you give it this rating? [OPEN END]

SP7i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC3a IF SP7g=0,1,2,3 AND SP7i =0,1,2,3]

CC3a When you answered ...<SP7g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

[ASK CC3b IF SP7g=8,9,10 AND SP7i =8,9,10]

CC3b When you answered ...<SP7g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the Smart Ideas for Your Business program.

Program Processes and Satisfaction

S0 How did you first hear about the Smart Ideas program?

1. (ComEd Account Manager)
2. (ComEd Website)
4. (Contractor/Trade Ally)
5. (Email)
6. (Friend/colleague/word of mouth)
11. (Vendor)
13. (Consultant)
14. (Supplier)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S1a Did YOU fill out the application forms for the project? (Either the initial or the final program application)

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

[ASK S1b IF S1a=1 ELSE SKIP TO S1e]

S1b Did the application forms clearly explain the program requirements and how to participate?

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

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy". [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S1d IF S1c<4]

S1d Why did you rate it that way?

1. (Difficult to understand)
2. (Long process)
00. (Other, specify)

- 98. (Don't know)
- 99. (Refused)

[ASK S1e IF S1a=2]

S1e Who filled out the application forms for the project?

- 1. (Someone else at the facility)
- 2. (Someone else at the company)
- 3. (Trade Ally)
- 4. (Contractor)
- 5. (Supplier/Distributor/Vendor)
- 6. (Engineer)
- 7. (Consultant)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

S4a Did you use a contractor for your <ENDUSE> project?

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

[ASK S4b IF S4a=1]

S4b Was the contractor you used affiliated with the Smart Ideas program? (IF NEEDED: Was the contractor REGISTERED with the Smart Ideas program?)

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

[ASK S5 IF S4a=1 ELSE SKIP TO S7]

S5 How would you rate the contractor's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 98=Don't know, 99=Refused]

S6a Would you recommend the contractor you worked with to other people or companies?

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

[ASK S6b IF S6a=2]

S6b Why not?

- 1. (Too small)
- 00. (Other, specify)

- 98. (Don't know)
- 99. (Refused)

S7 When implementing an energy efficiency project, how important is it to you that the contractor is affiliated with the Smart Ideas Program? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "very important"? [SCALE 0-10; 98=Don't know, 99=Refused]

S8 During the course of your participation in the program, did you place any calls to the Smart Ideas for Your Business Call Center?

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

[ASK S8a IF S8=1]

S8a On a scale of 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied;" how would you rate your satisfaction with the Call Center's ability to answer your questions? [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S8b IF S8a<4]

S8b Why did you rate it that way?

- 1. (Provided inconsistent information)
- 2. (Didn't understand the question)
- 3. (Hard to reach the right person/person with the answer)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with... [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]

- a. the incentive amount
- b. the communication you had with the Smart Ideas program staff
- c. BLANK
- d. the Smart Ideas program overall
- e. ComEd overall

[ASK S12a IF S11a<4]

S12a. You indicated some dissatisfaction with the incentive amount, why did you rate it this way?

[MULTIPLE RESPONSE; UP TO 3]

- 1. (Better rebates in other states)
- 2. (Too small)
- 3. (Equipment didn't qualify)
- 00. (Other, specify)
- 98. (Don't know)

99. (Refused)

[ASK S12b IF S11b<4]

S12b. You indicated some dissatisfaction with the communication you had with the Smart Ideas staff, why did you rate it this way?

1. (Provided inconsistent information)
2. (Didn't understand the question)
3. (Hard to reach the right person/person with the answer)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S12c. BLANK

[ASK S12d IF S11d<4]

S12d. You indicated some dissatisfaction with the Smart Ideas Program overall, why did you rate it this way?

1. (Not as easy as other states)
2. (No clear guidance)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK S12e IF S11e<4]

S12e. You indicated some dissatisfaction with ComEd overall, why did you rate it this way?

1. (Rates are too high)
2. (Took too long to get rebate)
3. (Poor customer service)
4. (Poor power supply/service)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S10a Did you experience any problems during the participation process? (IF NEEDED: Other than what we have already talked about)

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

[ASK S10b IF S10a=1]

S10b What problems did you experience?

1. (Process takes too long)
2. (Inconsistent information)

- 3. (Low incentives/rebates)
- 4. (Program ran out of money)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

Marketing and Outreach

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the Smart Ideas for Your Business program. Have you ever... [1=Yes, 2=No, 8=(Don't know), 9=(Refused)]

- a. Received information about the program in your monthly utility bill?
- b. Attended a ComEd customer event where the program was discussed?
- c. Discussed the program with a ComEd Account Manager?
- d. Discussed the program with a Contactor or Trade Ally?
- e. Seen information about the program on the ComEd Website?
- f. Received information about the program in an Email?
- g. Heard about the program from a colleague, friend or family member?
- h. Attended a meeting, seminar or workshop where the program was presented?
- i. Attended a webinar where the program was discussed?
- j. Read about the program in a ComEd Newsletter?
- k. Been directly contacted by a ComEd or KEMA outreach staff?

MK01 Have you heard about the Smart Ideas for Your Business program through any other means?

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

[ASK MK02 IF MK01=1]

MK02 How else did you hear about the program? [MULTIPLE RESPONSE; UP TO 3]

- 1. (Supplier/Distributor)
- 2. (Customer)
- 3. (TV/Radio/Newspaper)
- 4. (Professional Association)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

MK1b How useful were the program's marketing materials in providing information about the program? Would you say they were...

- 1. Very useful
- 2. Somewhat useful

- 3. Not very useful
- 4. Not at all useful
- 8. (Don't know)
- 9. (Refused)

[ASK MK1c IF MK1b=3,4]

MK1c What would have made the materials more useful to you? [MULTIPLE RESPONSE, UP TO 3]

- 1. (More detailed information)
- 2. (Where to get additional information)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

MK2 In general, what is the best way of reaching companies like yours to provide information about energy efficiency opportunities like the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

- 1. (Bill inserts)
- 2. (Flyers/ads/mailings)
- 3. (e-mail)
- 4. (Telephone)
- 5. (ComEd Account Manager)
- 8. (Trade allies/contractors)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

MK3 BLANK

Benefits and Barriers

B1a What do you see as the main benefits to participating in the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

- 1. (Energy Savings)
- 2. (Good for the Environment)
- 3. (Lower Maintenance Costs)
- 4. (Better Quality/New Equipment)
- 5. (Rebate/Incentive)
- 9. (Able to make improvements sooner)
- 10. (Saves money on utility bill)
- 00. (Other, Specify)
- 98. (Don't know)

99. (Refused)

B1b What do you see as the drawbacks to participating in the program? [MULTIPLE RESPONSE, UP TO 3]

1. (Paperwork too burdensome)
2. (Incentives not high enough/not worth the effort)
3. (Program is too complicated)
4. (Cost of equipment)
5. (No drawbacks)
6. (Poor Communication)
7. (Time Consuming)
00. (Other, specify)
98. (Don't know)
99. (Refused)

B2 What do you think are the reasons companies like yours do not participate in this program? [MULTIPLE RESPONSE, UP TO 3]

1. (Lack of awareness of the program)
2. (Financial reasons)
4. (Not aware of savings/don't realize the savings)
5. (Difficulty of Application/Paperwork)
00. (Other, specify)
96. (None/no reasons)
98. (Don't know)
99. (Refused)

B3 Was the scope of your project limited by the program's incentive cap?

1. Yes
2. No
00. (Other, specify)
98. (Don't know)
99. (Refused)

Feedback and Recommendations

R1 Do you plan to participate in the program again in the future?

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

R2 How could the Smart Ideas for Your Business Program be improved? [MULTIPLE RESPONSE, UP TO 4]

1. (Higher incentives)
2. (More measures)
3. (Greater publicity)
4. (Better Communication/Improve Program Information)
8. (Simplify application process)
11. (Quicker processing times)
00. (Other, specify)
96. (No recommendations)
98. (Don't know)
99. (Refused)

Firmographics

I only have a few general questions left.

F1a What is <COMPANY>'s business type? (PROBE, IF NECESSARY; IF MANUFACTURING, PROBE IF IT IS LIGHT INDUSTRY OR HEAVY INDUSTRY)

1. (K-12 School)
2. (College/University)
3. (Grocery)
4. (Medical)
5. (Hotel/Motel)
6. (Light Industry)
7. (Heavy Industry)
8. (Office)
9. (Restaurant)
10. (Retail/Service)
11. (Warehouse)
15. (Property Management/Real Estate)
00. (Other, specify)
98. (Don't know)
99. (Refused)

F1b And is the business type of the facility in which the <ENDUSE> was installed the same?

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

[ASK F1c IF F1b=2]

F1c What is the business type of the facility? (PROBE, IF NECESSARY – CLASS MANUFACTURING AS EITHER LIGHT OR HEAVY INDUSTRY)

1. (K-12 School)
2. (College/University)
3. (Grocery)
4. (Medical)
5. (Hotel/Motel)
6. (Light Industry)
7. (Heavy Industry)
8. (Office)
9. (Restaurant)
10. (Retail/Service)
11. (Warehouse)
15. (Property Management/Real Estate)
00. (Other, specify)
98. (Don't know)
99. (Refused)

F2 Which of the following best describes the ownership of this facility?

1. <COMPANY> owns and occupies this facility
2. <COMPANY> owns this facility but it is rented to someone else
3. <COMPANY> rents this facility
8. (Don't know)
9. (Refused)

[SKIP if F2=1]

F3 Does <COMPANY> pay the electric bill?

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

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

[ASK F4b IF F4a=998]

F4b Do you know the approximate age? Would you say it is...

1. Less than 2 years
2. 2-4 years
3. 5-9 years
4. 10-19 years
5. 20-29 years
6. 30 years or more years
8. (Don't know)
9. (Refused)

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

[ASK F5b IF F5a=9998]

F5b Do you know the approximate number of employees? Would you say it is...

1. Less than 10
2. 10-49
3. 50-99
4. 100-249
5. 250-499
6. 500 or more
8. (Don't know)
9. (Refused)

F6 Which of the following best describes the facility? This facility is...

1. <COMPANY>'s only location
2. one of several locations owned by <COMPANY>
3. the headquarters location of <COMPANY> with several locations

[SKIP F7 IF F2=2]

F7 In comparison to other companies in your industry, would you describe <COMPANY> as...

1. A small company
2. A medium-sized company
3. A large company
4. (Not applicable)
8. (Don't know)
9. (Refused)

5.4.5 Phone Survey of Non-Participating Customers

COMED SMART IDEAS FOR YOUR BUSINESS PROGRAM

NON-PARTICIPANT SURVEY

Final 08/11/11

INTRODUCTION

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. This is not a sales call. We are conducting research on behalf of ComEd to help them develop programs to better serve their business customers. I'm looking to speak with the person responsible for making energy decisions for the company. (IF NEEDED: I am looking to speak with someone who might be involved in any decisions to improve the efficiency of the energy consuming systems your business uses, such as lighting or air conditioning) Could you connect me to the appropriate person?

SCREENING

- S1 Since June 2008, has <COMPANY> received a rebate from ComEd for the installation of one or more energy-efficient measures?
- 1 Yes [THANK AND TERMINATE]
 - 2 No
 - 8 (Don't know)
 - 9 (Refused) [THANK AND TERMINATE]

PROCESS QUESTIONS

Program Awareness and Familiarity

- PA1 Are you aware that ComEd offers energy efficiency programs to help commercial and industrial customers make energy efficiency improvements at their facilities?
- 1 Yes
 - 2 No
 - 8 (Don't know)
 - 9 (Refused)
- PA2 Have you heard of the Smart Ideas for Your Business Program?
- 1 Yes
 - 2 No
 - 8 (Don't know)
 - 9 (Refused)

[SKIP to MK2 IF PA2=2,8,9]

- PA3 How would you rate your familiarity with the Smart Ideas for Your Business Program? Would you say you are...

- 1 Very familiar
- 2 Somewhat familiar
- 3 Not very familiar
- 4 Not at all familiar
- 8 (Don't know)
- 9 (Refused)

S0 How did you first hear about the Smart Ideas for Your Business Program?

- 1 (ComEd Account Manager)
- 2 (Contractor)
- 3 (Friend/colleague/word of mouth)
- 4 (ComEd Website)
- 5 (Email)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

MK2 In general, what is the best way of reaching your company with information about energy efficiency opportunities like the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

- 1. (Bill inserts)
- 2. (Flyers/ads/mailings)
- 3. (e-mail)
- 4. (Telephone)
- 5. (ComEd Account Manager)
- 8. (Contractor)
- 00. (Other, specify)
- 98. (Don't know)
- 99. (Refused)

Energy Efficiency Knowledge and Baseline

EE1 How would you rate your knowledge of the different ways your company can save money by using energy more efficiently? Would you say that you are...

- 1 Very knowledgeable
- 2 Somewhat knowledgeable
- 3 Not very knowledgeable
- 4 Not at all knowledgeable
- 8 (Don't know)
- 9 (Refused)

EE2 On a scale of 0 to 10 where 0 is "not at all efficient" and 10 is "extremely efficient", how energy efficient would you rate your facility? [SCALE 0 to 10; 98=Don't know, 99=Refused]

- EE3 Has this facility ever had an energy audit/consultation to assess its energy efficiency?
- 1 Yes
 - 2 No
 - 8 (Don't know)
 - 9 (Refused)

Equipment Purchases

Now I would like to ask you some questions about equipment purchases for this location.

Decision-Making

- EP1 Thinking about the types of equipment at your facility that consume the most energy (such as lighting, heating & cooling systems), when it's time to replace this equipment, who makes the decisions on the type of equipment to install?
- 1 (I/Me)
 - 2 (Somebody else at this facility)
 - 3 (Somebody at the company/corporate office)
 - 4 (The owner/landlord – if facility is rented)
 - 5 (The property management firm)
 - 6 (Contractor/consultant)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

[SKIP TO PP1 IF EP1=4,5]

- EP2 In general, when considering purchasing new equipment, what sources do you consult for information and guidance on what type of equipment to select? [MULTIPLE RESPONSE, UP TO 3]
- 1 (Your own experience)
 - 2 (Other employees of the company)
 - 3 (Contractor/Consultant)
 - 4 (ComEd/ComEd Account Manager)
 - 5 (Internet)
 - 00 (Other, specify)
 - 98 (Don't know)
 - 99 (Refused)

- EP3 On a scale of 0 to 10 where 0 is “not at all important” and 10 is “very important,” how important are the following factors when purchasing new equipment for your facility? [SCALE 0-10; 98=Don't know, 99=Refused]
- a Purchase cost
 - b Operating and maintenance cost
 - c Investment payback period
 - d Energy efficiency
 - e Aesthetics
 - f Availability

EP4 We are interested in understanding how companies like yours make decisions about purchasing energy efficient equipment. I am going to read a list of statements that may or may not apply to your company at this time, but please answer them to the best of your ability. Using a scale from 0 to 10 where 0 is 'Strongly Disagree' and 10 is 'Strongly Agree,' please indicate your level of agreement with the following statements [SCALE 0 to 10; 98=Don't know, 99=Refused]:
[Randomize List]

- a It's hard to figure out if the extra money we might need to spend on an energy efficient piece of equipment is really worth it.
- b It's hard to figure out what the best piece of energy efficient equipment to buy is because of all the technical information we need to find.
- c If we had a question about the energy efficient equipment options available to us, we wouldn't know where to find the answer.
- d Price is the biggest reason why my company might not buy a high efficiency item.
- e It is difficult to get the internal approval we need in order to purchase a piece of energy efficient equipment.

Past Purchases

PP1 In the past three years, have there been any installations of ENERGY EFFICIENT equipment, or other energy efficient upgrades, at this facility?

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

[SKIP TO PP5 IF PP1=2,8,9]

PP2 What type of energy efficient equipment was installed or upgraded? (IF TOO MUCH DETAIL IS GIVEN, PROMPT FOR MAJOR END-USE CATEGORIES LISTED) [MULTIPLE RESPONSE; UP TO 5]

- 1 (Lighting)
- 2 (Heating/Cooling/HVAC)
- 3 (Motors)
- 4 (Variable Speed Drives/VSDs)
- 5 (Refrigeration equipment)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

[SKIP TO PP5 IF EP1=4,5]

PP3 What were the reasons for installing energy efficient equipment as opposed to standard efficiency equipment? [MULTIPLE RESPONSE; UP TO 3]

- 1 (Save energy/save money)
- 2 (Improve equipment performance)
- 3 (Benefit from energy efficiency tax credits/incentives)
- 4 (To be a more "green" company)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

[SKIP IF PA2=2,8,9]

PP4 What were your reasons for not participating in the Smart Ideas for Your Business Program?
[MULTIPLE CHOICE, UP TO 3]

- 1 (Wasn't aware of the program at the time)
- 2 (Didn't have enough information about the program)
- 3 (Incentives not high enough/not worth the effort)
- 4 (Cost of energy efficiency equipment)
- 5 (Program is too complicated/confusing)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

PP5 In the past three years, have there been any installations of equipment, or other upgrades, at this facility that were NOT energy efficient?

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

[SKIP IF PP5=2,8,9 OR EP1=4,5]

PP6 Why didn't you install high efficiency equipment?

- 1 (Costs more/too much)
- 2 (Wasn't available)
- 3 (Was not aware of options)
- 4 (Purchased used equipment)
- 5 (Wasn't recommended by contractor/vendor)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

[SKIP TO FIRMOGRAPHICS IF EP1=4,5]

PP7 On scale from 0 to 10, where 0 is "not at all" and 10 is "a great deal", to what extent has the current economic downturn adversely affected your investment decisions with respect to purchasing new equipment? [SCALE 0 to 10; 98=Don't know, 99=Refused]

[SKIP if PP7=0]

PP8 And to what extent has the current economic downturn adversely affected your investment decisions with respect to purchasing ENERGY EFFICIENT equipment? Please use the same scale from 0 to 10, where 0 is "not at all" and 10 is "a great deal." [SCALE 0 to 10; 98=Don't know, 99=Refused]

Future Purchases

FP1a Within the next 2 years, do you plan to install any new equipment at this facility?

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

[SKIP TO FIRMOGRAPHICS IF FP1a=2,8,9]

FP1b What type of equipment do you plan to install? (IF TOO MUCH DETAIL IS GIVEN, PROMPT FOR MAJOR END-USE CATEGORIES LISTED) [MULTIPLE RESPONSE; UP TO 5]

- 1 (Lighting)
- 2 (Heating/Cooling/HVAC)
- 3 (Motors)
- 4 (Variable Speed Drives/VSDs)
- 5 (Refrigeration equipment)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

FP2 How likely is it that the equipment you plan to install will be energy efficient? Would you say...

- 1 Very likely
- 2 Somewhat likely
- 3 Not very likely
- 4 Not at all likely
- 8 (Don't know)
- 9 (Refused)

[SKIP TO FIRMOGRAPHICS IF FP2=4,8,9 OR PA2=2,8,9 OR PA3=4,8,9]

FP3a How likely are you to participate in the Smart Ideas for Your Business Program when you install your energy efficient equipment? Would you say you are...

- 1 Very likely
- 2 Somewhat likely
- 3 Not very likely
- 4 Not at all likely
- 8 (Don't know)
- 9 (Refused)

[SKIP IF FP3a=1,2,8,9]

FP3b Why are you not likely to participate in the program? [MULTIPLE RESPONSE, UP TO 3]

- 1 (Don't have enough information about the program)
- 2 (Incentives not high enough/not worth the effort)
- 3 (Cost of energy efficiency equipment)
- 4 (Program is too complicated/confusing)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

FIRMOGRAPHICS

I only have a few general questions left.

F1 What is the business sector of this facility? (PROBE, IF NECESSARY)

- 1 (K-12 School)
- 2 (College)
- 3 (Grocery)
- 4 (Medical)
- 5 (Hotel/Motel)
- 6 (Light Industry)
- 7 (Heavy Industry)
- 8 (Office)
- 9 (Restaurant)
- 10 (Retail/Service)
- 11 (Warehouse)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

F2 Does your company own or rent this facility?

- 1 (Own)
- 2 (Rent)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

F6 Which of the following best describes your facility? This facility is...

1. my company's only location
2. one of several locations owned by my company
3. the headquarters location of a company with several locations

[SKIP F7 IF F2=2]

F7 In comparison to other companies in your industry, would you describe your company as...

1. A small company
2. A medium-sized company
3. A large company
4. (Not applicable)
8. (Don't know)
9. (Refused)