

sector of the population and the sample are quite similar: local government represents the majority; K-12 schools represent about a third; and all other sectors represent less than 10% combined.

Table 2-10. Comparison of Completed Interviews and Population by Sector

Sector	Population*		Completed Survey	
	#	%	#	%
Local Government	195	58%	48	62%
K-12 Schools	115	34%	23	30%
Federal Government	6	2%	2	3%
College	8	2%	2	3%
University	5	1%	1	1%
State Government	6	2%	1	1%
TOTAL	335		77	

**Note: The population represents the number of unique contacts who completed projects that could be used for survey fielding purposes (including those that were removed due to overlap with the Custom Program).*

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

Based on these comparisons, we conclude that survey responses to the process questions are reasonably representative of the PY3 population.

Section 3. Program Level Results

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

3.1 Impact Analysis

3.1.1 Tracking System and Default Savings Review

Tracking System Review

Midway through PY3, DCEO implemented a transition from the spreadsheet-based tracking approach used throughout PY1 and PY2 and most of PY3 to a new centralized relational database tracking system. The transition for program staff occurred later in PY3, and the new system was undergoing programming refinements throughout the summer of 2011 at the time when evaluation sample design was taking place. The evaluation team works off of extracts generated from the tracking system data provided by DCEO on a periodic basis. Evaluation sample design was completed using an extract from July 13, 2011, and final reported savings for PY3 were provided by a September 7, 2011 extract.

The new tracking system provides the calculation engine that produces program reported savings. The tracking system includes lookup tables that draw in default savings assumptions and user provided input data for measure type, quantity, size, and building type. Although measure description information was populated in the tracking system, applications involving more than one measure record savings as a single value. If the tracking system stored measure-level savings information it would facilitate savings verification analysis and allow the evaluation team to provide greater detail to reporting.

The new tracking system provides expanded contact information for program applicants and program allies, and this greatly facilitated our development of the telephone survey sample data. It was evident from the data that additional work is needed to clean data pulled in from the old system, and to incorporate new data from hard copies, such as contractor information, that was partially filled in at the time we drew our sample.

In comparison with PY1 and PY2, the PY3 data was much clearer and stable with regard to project status information after May 31, 2011 program close. DCEO improved the timeliness of processing end-of-year applications by more than a month over previous years, and provided a stable project count of PY3 participants from mid-June onward.

Default Savings Review

DCEO default savings assumptions are built into the new tracking system as lookup tables for kWh savings per unit assumptions by measure and building type. The source of the default

values are ComEd's measure default savings as documented in ComEd's Appendix A of the Business Prescriptive program operations manual.¹¹ DCEO default savings are differentiated by four building types from the ComEd assumptions: College/University, Medical, Office, and K-12 School. To generate savings for tracking, DCEO must select one of these four building types to represent the project. For projects in the local government sector, one of the four default building types must be matched to the project, based on program staff judgment of operating hours and space function.

During PY4, DCEO should work with the evaluation team to explore whether additional building types or modifications to existing building types would be beneficial for reporting energy savings. Although the current set of building types work reasonably well, they were developed by ComEd for commercial businesses and not specifically designed for public building types. After three years of Standard program operation and evaluation cycles, plus work conducted by SEDAC, a substantial set of site collected data is available.

The evaluation team reviewed ComEd's measure default savings for PY3 that were the basis for DCEO's default values. The PY3 review was less extensive than conducted in PY1 and PY2 because ComEd has addressed previous recommendations, and many measures and assumptions are unchanged. Measures reviewed by the evaluation team in greater detail for PY3 were refrigeration measures, food service measures, and variable speed drives, and the PY3 default values were judged to be reasonable by the evaluation team.

Tracking System Check for Default Values Implementation

We compared DCEO's default values in their new tracking system against ComEd's PY3 default values – approximately 2,000 individual values. For most measures, the DCEO kWh per unit savings assumptions match ComEd's PY3 values exactly, or had insignificant differences due to rounding. A few measures did not match ComEd's PY3 values:

- It appears DCEO has switched the default values for LED channel signs less than two feet with the default for signs over 2 feet. This measure was eliminated for PY4.
- ComEd implemented revisions to their HVAC measure offerings and default values for PY2 and PY3, and these updates were not reflected in all of the DCEO PY3 default values. We have no objection to DCEO retaining PY1 values where used until the statewide deemed values become effective. The evaluation team can assist DCEO in coordination with ComEd.
- DCEO uses ComEd assumptions from PY1 for screw-in compact fluorescent lighting and from PY2 for refrigeration economizers. ComEd did not offer these measures in

¹¹ KEMA, *Appendix A - Prescriptive Measures*, (file provided: "ComEd Workpapers 6-1-10.doc"). This document is sometimes referred to as a Technical Reference Manual (TRM) or as "ComEd Workpapers June 1, 2010 version".

PY3. We have no objection to DCEO retaining these values until the statewide deemed values become effective.

- ComEd does not offer traffic signal incentives. DCEO's default values were reasonable for ex ante savings reporting.

Our comparison is attached in Appendix 5.4.

During PY4, prior to closing out year-end ex ante savings estimates, the evaluation team will assist DCEO by reviewing default values and ex ante savings calculation outputs to ensure that tracking system output matches values expected by the evaluators.

3.1.2 Gross Program Impact Parameter Estimates

Ex post gross program impacts were developed for the Standard program based on engineering file review, participant interviews, and site M&V for a sample of applications.

Gross Impact Adjustments Triggered by the Participant Telephone Survey

A brief set of questions in the CATI survey was asked regarding lighting hours of use to support the gross impact evaluation. Gross impacts were adjusted *only* for those projects in the engineering file review group. Of the 78 completed telephone interviews, six covered projects that were also in the engineering review sample for gross impact evaluation. Of the six projects, four provided substantial increases to energy savings realization rate due to longer hours of use than assumed by default values, while two projects had hours of use adjusted downwards based on participant responses.

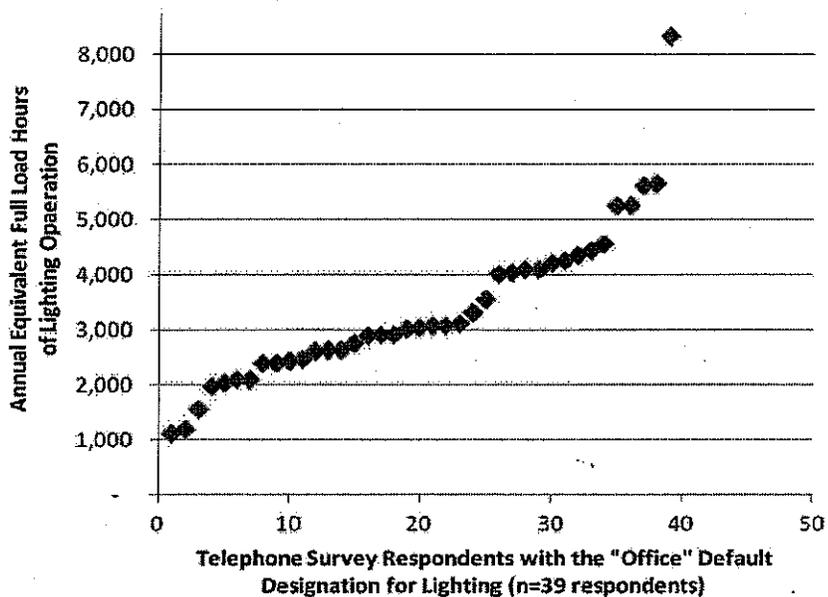
Table 3-1 below provides the un-weighted average annual equivalent full load hours (EFLH) of operation for lighting among all respondents (64) who provided complete responses to the lighting hours of operation questions.

Table 3-1. Participant Responses to Lighting EFLH Questions by Public Sector Type

Public Sector Type	Respondent Count	Respondent Un-weighted Average Equivalent Full Load Annual Lighting Hours	Typical Default Annual Lighting Hours of Use and Building Type
Local Government	38	3,425	2,808 (Office)
K-12 Schools	23	3,278	1,873 (K-12 School)
Federal Government	1	2,628	2,808 (Office)
State Government	1	2,390	2,808 (Office)
College	1	4,618	3,433 (College)
TOTAL	64	3,362	

Among respondents with lighting projects that were assigned an “office” building type as a default value, the distribution of responses for annual equivalent full load hours of use is provided in the figure below.

Figure 3-1. Telephone Survey Responses for Participants with “Office” lighting



Realization Rates for the Standard 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.¹² In the case of a separate ratio estimator, a separate gross kWh savings 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 Standard 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 3-2 and Table 3-3 below.

Table 3-2. Gross Impact Realization Rate Results for the Standard Sample

Sampling Strata	Sample-Based Ex Ante kWh Impact Claimed	Sample-Based Ex Post Gross kWh Impact	Sample-Based Ex Post Gross kWh Realization Rate	kWh Weights
1	20,890,748	23,181,007	1.11	0.390
2	4,175,611	3,435,079	0.82	0.256
3	1,528,882	1,864,541	1.22	0.354

¹² A full discussion and comparison of separate vs. combined ratio estimation can be found in Sampling Techniques, Cochran, 1977, pp. 164-169.

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

Sampling Strata	Relative Precision	Low	Mean	High
	± %			
Stratum 1	0%	1.11	1.11	1.11
Stratum 2	17%	0.68	0.82	0.96
Stratum 3	16%	1.02	1.22	1.42
Total kWh RR	7%	1.01	1.09	1.17

The realization rates analyzed by strata form the basis for estimating the overall realization rate applied to total ex-ante gross program savings at the stated confidence level and relative precision.

Below we present additional summaries of the verification sample results by other factors, including M&V approach and public sector customer type, to provide insight into the findings. Realization rates shown below are not statistically valid at the 90/10 level of confidence and relative precision. The results are summarized in Table 3-4 and Table 3-5 below.

Table 3-4. Gross Impact Realization Rate Results for the Standard Sample – by M&V Approach and Strata

M&V Approach	Strata	Application Count	Sample-Based Ex Ante kWh Impact Claimed	Sample-Based Ex Post Gross kWh Impact	Sample-Based Ex Post Gross kWh Realization Rate
On-Site	1	8	20,890,748	23,181,007	1.11
	2	8	1,869,742	1,868,428	1.00
	3	9	752,420	792,494	1.05
Engineering File Review	1	0	-	-	-
	2	6	2,305,869	1,566,651	0.68
	3	21	776,462	1,072,047	1.38
Total		52	26,595,241	28,480,627	1.07

Table 3-5. Gross Impact Realization Rate Results for the Standard Sample – By Public Sector

Public Sector	Application Count	Sample-Based Ex Ante kWh Impact Claimed	Sample-Based Ex Post Gross kWh Impact	Sample-Based Ex Post Gross kWh Realization Rate
Local Government	26	16,682,655	17,160,842	1.03
K-12 Schools	19	2,192,672	2,525,754	1.15
Federal Government	2	2,174,610	4,338,206	1.99
College	1	308,880	221,441	0.72
University	4	5,236,424	4,234,384	0.81
Total	52	26,595,241	28,480,627	1.07

3.1.3 Gross Program Impact Results

Based on the gross impact parameter estimates described previously, gross program impacts were derived for the PY3 Standard program. The results are provided in Table 3-6.

Table 3-6. Gross Parameter and Savings Estimates

Segment	kWh, Ex Ante	kWh, Ex Post	kWh RR
Standard	53,634,742	58,328,889	1.09

Some general observations from the gross impact sample:

The realization rate for kWh was 1.09 in PY3. Individual measures and projects had realization rates greater and less than 1.09, however the overall value of 1.09 is lower than the value of 1.27 observed for PY2. The primary factor in the high realization rate in PY2 was verified hours of use that were higher than default values on a significant number of sampled projects. In PY3, a large proportion of program savings was for traffic signal projects, including 36% of overall program savings with the City of Chicago, and these sampled projects were not subject to hours of use adjustments.

In PY3 it was commonly found that K-12 schools had longer hours of use than the default value of 1,873 hours per year. In the telephone survey, 21 of 23 respondents reported lighting operation, adjusted to annual equivalent full load hours of use, that were greater than the default value of 1,873 hours. For PY4, ComEd has increased the default value to 2,829 hours for

K-12 schools, and data from the PY3 Standard evaluation supports the use of ComEd's higher value.

DCEO commonly selected the office building type for lighting default values with projects for local, state, and federal government participants (choices were office, medical, school, and college/university). In the telephone survey, 24 of 39 respondents assigned the office building type reported lighting operation, adjusted to annual equivalent full load hours of use, that were greater than the office default value of 2,808 hours. There was significant variation in equivalent full load hours across respondents, from a low of 1,109 hours to a high of 8,322 hours, with an average of 3,371 hours. The field verification also observed a wide variation in site verified lighting hours of use. A factor in the wide range of verified hours of lighting use for the office default building type was the diverse functions of the spaces that fell into this default category. These included public service and safety buildings with 24 hour occupation in all or parts of the facility, general public facilities with extended hours, typical offices, and lightly used local government facilities. Although the average verified hours of use was greater than the default value of 2,808 hours, we recommend that DCEO consider expanding the number of buildings types from which to select a default rather than only raise average hours of use. It appears that the current office default type could be split into two building types: "office", and "public service extended operation" and possibly a third added "public service continuous operation". The "office" building type could remain at the current default value of 2,808 hours, while "continuous operation" would be appropriate for 8760 hour facilities. The "extended operation" default would need further analysis, but a value of 4,000 to 4,400 hours could be appropriate.

As K-12 schools and lighting projects with an office building type default were common projects in PY3, the primary factor raising the average realization rate for the overall program above 1.00 was a finding of hours of use that were longer than used in default savings in these two building types. As suggested above, adjusting the default lighting hours higher in the case of K-12 schools and adding additional building types with longer default hours to replace the single office type would provide DCEO with higher ex ante savings and could produce a realization rate closer to 1.00 in future evaluations.

One of the adjustments that increased or decreased ex post impacts, depending on the project, was quantity adjustments. As a general qualitative finding, DCEO was quite accurate on measure quantities claimed, with a common finding being exact or within one or two percent. There was one instance of a T8 lamp and ballast measure recording fixture quantities when the verified measure quantity should have been based on lamps – this resulted in a four-fold quantity increase for the measure.

One measure where fixture counts were not as accurate was on traffic signal modules. Some quantities for three-lamp modules had recorded number of lamps (3) rather than number of modules (1). These instances sometimes occurred on application forms that had correctly

entered number of modules for some of the traffic lighting measures. This finding occurred on projects #3398, #3425, #3540, and #3579 in our sample. These are stratum 2 projects, and this was a significant factor in contributing to the relatively lower realization rate seen in this stratum. If these four large projects had a realization of 1.0, the realization rate for stratum 2 would have been 1.03 rather than 0.82, and the overall realization rate for the program would have been 1.13 rather than 1.09.

There was an instance of ineligible equipment for the measure "high performance or reduced wattage 4 foot T8 lamp and ballast." This measure requires T12 lighting as a baseline and both the installed lamp and ballast must meet eligibility specifications to claim the full default lamp and ballast savings. In these cases, we determine savings based on alternative measures if components are eligible. On project #3166, the baseline and ballast did not qualify, and instances of this measure were converted to "reduced wattage T8 lamp only", resulting a lower realization rate.

There are sampled projects where verified savings will differ from what DCEO has claimed, but do not represent any kind of error by DCEO in recording savings. Some adjustments to energy savings were made based on verified performance of baseline and installed equipment performance being different than default assumptions. These adjustments were not factors under control of DCEO in the Standard program, but are inherent in setting default values that are intended to serve as averages that will represent expected participants. For example, the default savings for some lighting measures, such as permanent lamp removal, aggregates many combinations of lamps and ballasts of different wattages into a single average. When verifying this measure in the field, the evaluators often find a wattage impact that differs from the assumed average. This wattage difference leads to a difference between what DCEO claimed for savings and what the evaluation team estimates based on site collected data. The realization rate differs from 1.00, even though DCEO's the savings estimate correctly adheres to the default savings methodology. The magnitude of this type of adjustment is small in the Standard program, typically under ± 10 percent for the measures involved. If a trend is seen where evaluation findings are consistently lower or higher than default values, it suggests a revision should be made to the default value (for example, as seen with K-12 school lighting hours of use).

3.1.4 Net Program Impact Parameter Estimates

Once gross program impacts have been estimated, net program impacts are calculated by multiplying the gross impact estimate by the program Net-to-Gross (NTG) ratio. As mentioned above, the NTG ratio for the PY3 Standard program was estimated using a customer self-report approach supplemented by vendor or designer interviews when triggered. This approach relied on responses provided by program participants during the CATI telephone survey to determine the fraction of measure installations that would have occurred by participants in the absence of the program (free-ridership).

The Standard net-to-gross interview results were supplemented by the results of 14 Custom program interviews with project contacts that had combined Custom and Standard projects and reported a single decision making process was used for both measure types. 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 and included in the sample.

The NTG ratio and relative precision at a 90% confidence level for the overall program is provided in Table 3-7.

Table 3-7. NTG Ratio and Relative Precision at 90% Confidence Level - Overall

Sample Strata	Population (N=449)	NTG Interviews (n=92)	NTG Sample (n=128)	Sample kWh Wgts.	Relative Precision ± %	Low	NTGR Mean	High
1	8	5	5	0.390	12%	0.53	0.60	0.67
2	40	7	26	0.256	4%	0.58	0.60	0.62
3	401	80	97	0.354	4%	0.73	0.76	0.78
Total	449	92	128	1.000	7%	0.61	0.66	0.70

Comparing PY2 and PY3, the mean NTG ratio decreased from PY2 (0.75) to PY3 (0.66). Although the PY3 results experienced a large increase in the number of smaller projects, as seen in stratum 3, these did not have a dramatic impact on the NTG ratio relative to PY2. The primary difference between PY2 and PY3 was that larger PY3 projects had substantially lower NTG ratios than in PY2, which had a NTG ratio of 0.70 for stratum 1 and 0.80 for stratum 2 projects in PY2. In PY3, some large projects had quite low NTG ratios, and a substantial fraction had results in the 0.60 to 0.65 range.

As discussed in the methodology section, quantifying free-ridership requires estimating what would have happened in the absence of the DCEO program. A customer with a high free-ridership score typically has made a decision and committed funds to an efficiency project prior to learning about the DCEO program, and would have been quite likely to implement the exact same measures at the exact same time (or within a year) had the DCEO program not been available. In such a case, relative less importance is assigned to DCEO by the participant for the rebate and other services offered by DCEO. It is frequently seen that larger customers with full-time facility managers knowledgeable in energy efficiency indicate less influence by the program in free-ridership scoring. Participants with *lower* free-ridership scores typically state emphatically that they would not have pursued the project without DCEO funding and assistance.

One factor that accounts for the lower NTG ratio was that LED traffic signal projects tended to have a NTG ratio lower than the mean value of 0.66, and traffics signals were a large proportion

of PY3 savings and sampled projects. The traffic signal projects identified factors unrelated to the DCEO program (for example, public safety) as influential in their decisions and responded with lower influence scores assigned to DCEO. Another factor was certain large institutional projects cited policies they were required to follow as the primary influence for implementing for energy efficiency projects.

Similar to PY2, the NTG ratio estimate for PY3 included a more complex "standard rigor" level of analysis conducted on larger projects. The expanded standard rigor analysis included additional questions regarding non-program influence factors and the possibility of triggering an interview with the vendor to determine the extent of program influence on the vendor, if the participant said the vendor was important to the decision to proceed with the project. For PY3, seven of 78 respondents in our Standard telephone sample went through the standard rigor approach, and two of the seven standard rigor interviews had responses that triggered follow-up interviews with two different design consultants. One designer interview resulted in an increase in the NTG ratio for that project, the other did not. The impact on overall NTG ratio of follow-up interviews was small, less 1 percent.

No adjustments were made to increase free-ridership in the Timing & Selection score for non-program influences, based on a review of participant responses and resulting scores. Non-program influences were weighed against program influences and open-ended comments made by participants during the interviews. Although some non-program influences such as government policy were given high importance by some respondents, there were other responses that indicated the program incentive and assistance were important in getting the organization to act on that policy and choose the measures that were installed.

In PY3, the evaluation team examined NTG ratios in the subgroup of the sample that mentioned receiving other "public sources" of funding for the implementation of the efficiency project discussed in the NTG interview. Specifically, 16 projects had self-reported during the interview that they had received funding of one of the following types:

- American Recovery and Reinvestment Act (ARRA)
- Energy Efficiency and Conservation Block Grant (EECBG)
- Illinois State Board of Education (ISBE)
- Illinois Clean Energy Grant

The NTG ratios for this group of 16 projects ranged from 0.17 to 1.00. The mean NTG ratio for this group including their 1 additional multiple-project, weighted by ex-ante kWh, was 0.67. For the group of Standard program NTG interviewees that did not mention one of the four other funding sources, the kWh weighted NTG ratio was 0.59. Although we did not generate a precision estimate for these subgroup estimates, it does not appear that receipt of other public funds was on average resulting in a NTG ratio that was lower than the mean value for the overall program.

Participant Spillover

The evidence of spillover from the CATI participant survey for the Standard program is presented in Table 3-8 below. These findings suggest that spillover effects for PY3 are relatively small, with only three respondents from the sample of 78 pursuing three measures (delamping, time-clocks for lighting, and room air conditioners) where a strong influence was indicated for the DCEO program. The three respondents were not in the impact sample and the potential savings could not be quantified from the responses. In PY2, the evidence for spillover was limited and therefore an enhanced effort to estimate it was not included in the PY3 evaluation plan. Although the evidence for participant spillover is limited again in PY3, the DCEO Standard program has reached a size (53.6 million kWh, 449 projects) where it would be worthwhile to attempt to quantify a small percentage spillover in PY4. Therefore, the Standard evaluation team will be conducting an enhanced effort to identify potential spillover candidates and quantify spillover in PY4.

Table 3-8. Evidence of Spillover in PY3 Standard from Participant Telephone Survey

Spillover Question	Evidence of Spillover
<p>Since your participation in the DCEO 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 78 respondents in the Standard sample, 16 said "Yes" (21%) and named an energy efficiency measure.</p>
<p>What type of energy efficiency measure was installed without an incentive?</p>	<p>Responses indicate number of measures by type mentioned by the 16 respondents:</p> <ul style="list-style-type: none"> (3) T5 or T8 lamps or Lighting upgrades (4) CFLs, LED lamps, LED exit signs (3) Lighting Controls (4) VSD in HVAC (5) HVAC, Unitary HVAC, and room AC (9) "Other" measures
<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 DCEO program in your decision to implement this energy efficiency measures?</p>	<p>Eleven of sixteen respondents provided a score of zero or don't know regarding all mentioned measures, but five respondents provided a non-zero score on eight measures:</p> <ul style="list-style-type: none"> (5 measures) Ratings of 4, 5 or 6 (1 measure) Rating of 8 (2 measures) Rating of 10
<p>If you had not participated in the DCEO 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>Eight respondents provided a score of 10 regarding all measures, but for the other eight respondents who provided an answer less than 10 regarding 15 measures:</p> <ul style="list-style-type: none"> (6 measures) Rating between 0 and 3 (7 measures) Rating between 4 and 6 (2 measures) Rating between 7 and 9

3.1.5 Net Program Impact Results

Net program impacts were derived by multiplying gross program savings by the estimated NTG ratio. Table 3-9 provides the program-level evaluation-adjusted net impact results for the PY3 Standard program.

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

Segment	Ex Ante Gross kWh	Ex Post Gross kWh	kWh RR	Ex Post Net kWh	NTGR (ex post gross)
Standard	53,634,742	58,328,889	1.09	38,236,880	0.66

3.2 Process Evaluation Results

The process evaluation of the Standard Program covered a range of topics, including program participation, program design and implementation, program partnerships, trade allies, marketing and outreach, barriers to participation, program drop-outs, public sector procurement process, and participant satisfaction. Data sources for the process evaluation include a review of program materials, three in-depth interviews with DCEO staff, ten in-depth interviews with program participants regarding the equipment procurement process, five in-depth interviews with program drop-outs, and a CATI telephone survey with 77 program participants. Telephone survey respondents are nearly evenly divided between customers in ComEd's service territory (38) and customers in Ameren's service territory (39).

3.2.1 Participant Profile

In PY3, 305 organizations completed a total of 449 standard projects that accounted for over 53.6 GWh of ex-ante gross savings.¹³ PY3 participants represent a range of sectors. Key observations, by sector, are:

Local governments represent the largest share of projects (58%), participants (57%), and energy savings (62%). K-12 schools account for the second largest share of projects (35%), participants (35%), and energy savings (19%). While most local government projects are small, this sector accounted for the single largest Standard Program project in PY3 (11 GWh, or 21% of total program savings).

Projects in the university and federal government sectors tend to be larger than those in other sectors (average of 708 MWh and 462 MWh, respectively). Three university projects and two federal government projects are among the eight largest projects in PY3.

Community colleges and state government projects represent the smallest shares of projects (2% each), participants (2% each), and energy savings (1% each).

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

¹³ Gross savings reported in this section are based on the program tracking database of August 2, 2011.

Table 3-10. Distribution of Projects, Entities, and Savings by Sector

Sector	Projects		Participants		Projects / Participant	Ex Ante Gross Savings		kWh/ Project
	#	%	#	%		kWh	%	
Local Government	260	58%	174	57%	1.5	33,306,792	62%	128,103
K-12 Schools	155	35%	106	35%	1.5	10,025,921	19%	64,683
Universities	8	2%	5	2%	1.6	5,662,935	11%	707,867
Community Colleges	11	2%	7	2%	1.6	776,496	1%	70,591
Federal Government	7	2%	6	2%	1.2	3,231,251	6%	461,607
State Government	8	2%	7	2%	1.1	631,347	1%	78,918
TOTAL	449		305		1.5	53,634,742		119,454

Source: DCEO Program Tracking Database

In PY3 Standard Program participation increased significantly compared to PY2, from 286 projects completed by 226 customers to 449 projects were completed by 305 customers. Accordingly, the ex-ante gross savings increased by 75% from 30.7 GWh in PY2 to 53.6 GWh in PY3. Ex post net savings increased by 31% from 29.2 GWh to 38.2 GWh from PY2 to PY3.

Key participation trends over the three program years include:

The total number of projects in PY3 increased by 57% over PY2 (449 vs. 286). The most significant increase came from the local government sector, where the number of projects almost doubled between PY2 and PY3 (from 138 to 260). State government also saw a jump, from only three projects in PY2 to eight in PY3. Participation by universities decreased from 20 projects in PY2 to only eight in PY3 (although the PY3 projects were larger so the total energy savings increased slightly). The share of projects implemented by local governments has steadily increased over the three program years, from 39% in PY1 to 48% in PY2 and 58% in PY3. The share of K-12 schools has remained relatively constant over the years, representing a little more than a third of projects (35%).

The total number of participants has increased by 35% over PY2 (305 vs. 226). The majority of that increase came from the local government sector (174 participants in PY3 compared to 116 in PY2). The distribution of participants across sectors in PY3 remains nearly identical to that of previous years: local governments represent the majority of participants, K-12 schools represent about one third, and all other sectors represent approximately 2% each of the participant population.

The largest change between PY2 and PY3 occurred with regard to energy savings, which increased by 75%. Local governments, in particular, showed the most dramatic increase in PY3,

nearly quadrupling its savings from PY2 (33.3 GWh vs. 8.8 GWh). As a result, local governments have shifted from representing about a third of ex ante savings in previous years to now generating over half. Community college projects saw the biggest drop in savings in PY3, a 65% decrease compared to PY2.

The average project size increased slightly, from 107 MWh per project in PY2 to 119 MWh in PY3. This is largely driven by increases in the average size of projects implemented by universities and local governments. All other sectors saw somewhat of a decrease in average project size compared to PY2.

The figures below compare the number of projects, participants, ex ante gross energy savings, and average project size by sector and program year.

Figure 3-2. Projects by Sector and Program Year

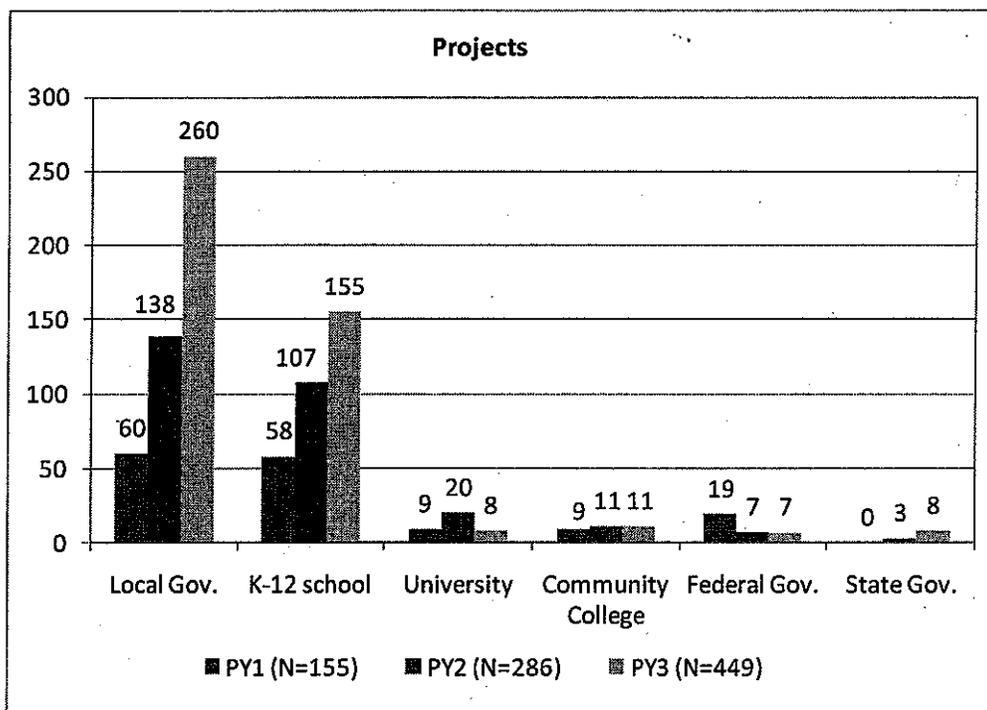


Figure 3-3. Participants by Sector and Program Year

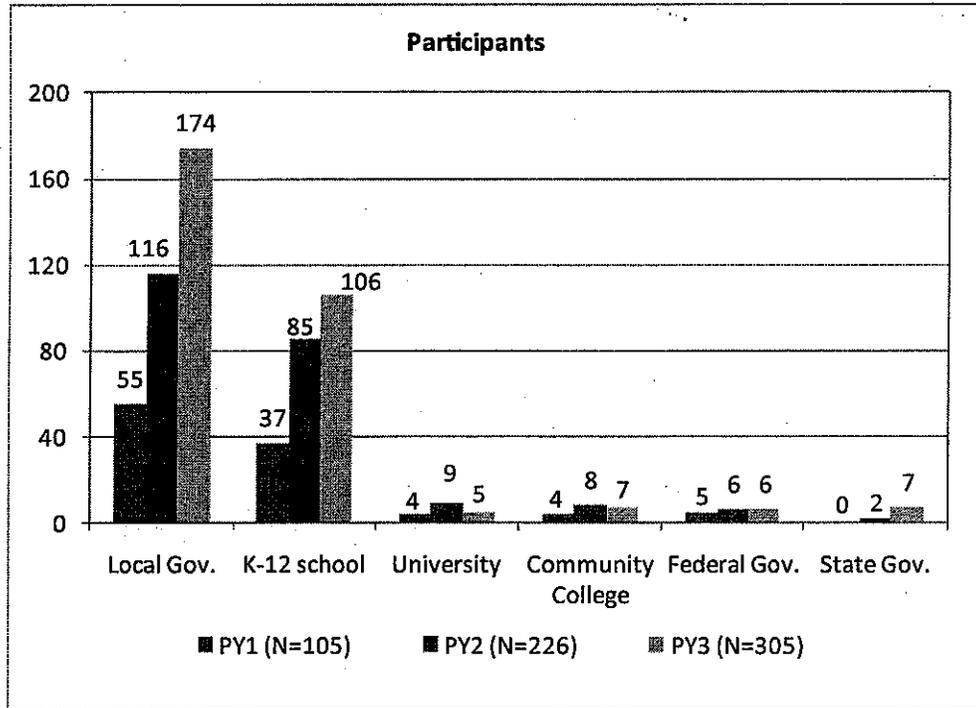


Figure 3-4. Energy Savings by Sector and Program Year

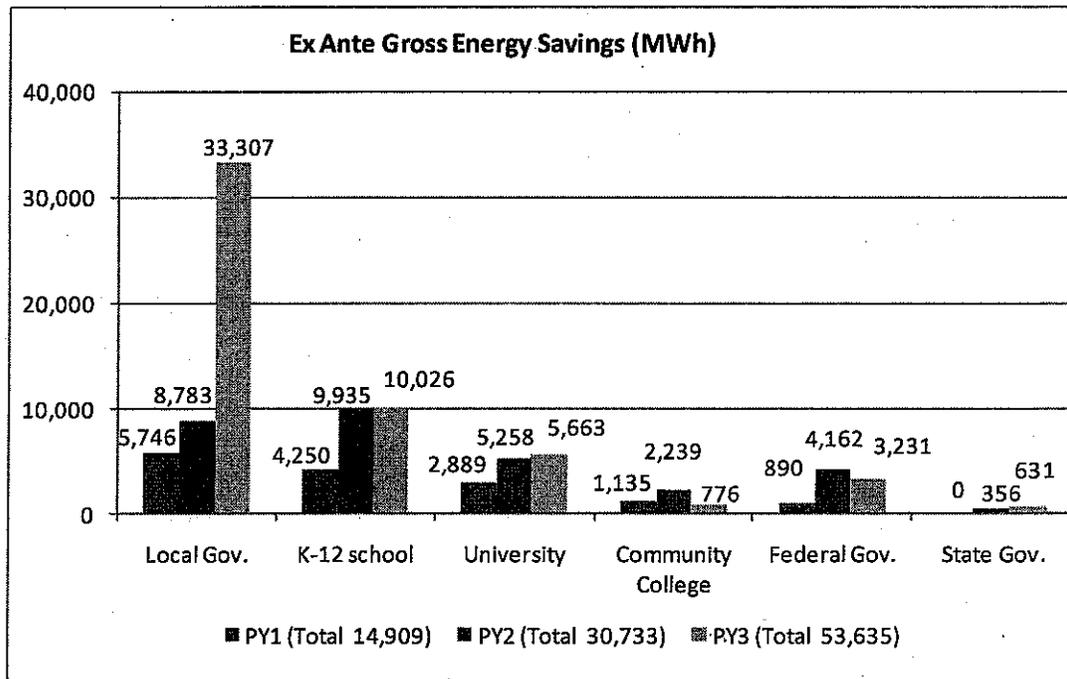
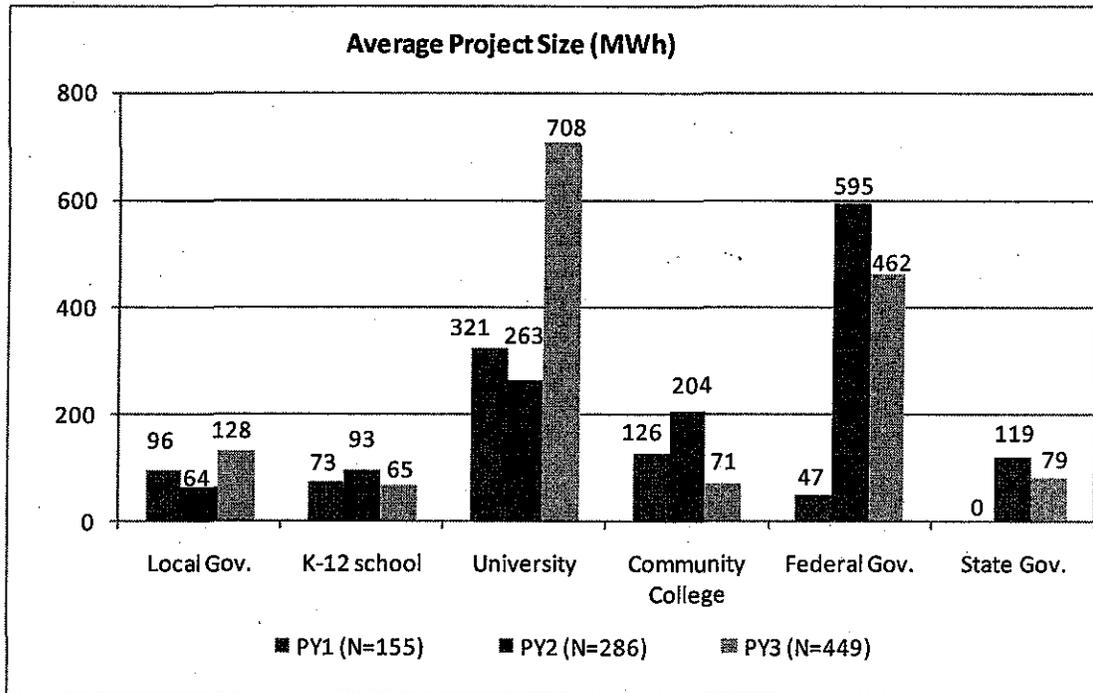


Figure 3-5. Average Project Size by Sector and Program Year



Source: DCEO Program Tracking Database

3.2.2 Program Design and Implementation

In PY3 several key changes were made to the design and implementation of the Standard Program:

Incentives: Program incentive caps were increased to \$300,000 (from \$200,000 in PY2). A “carve-out” group was developed consisting of local governments, K-12 schools, and community colleges that were offered increased incentive levels.

Promotions: The program conducted two promotions with increased incentive levels for specific sectors or for specific measures.

Resources: The program developed a database to enhance the previous system of tracking participation data in an Excel workbook. In addition, the program hired three new staff members.

Partnerships: The program began partnering with the Illinois State Board of Education (ISBE) to channel K-12 school participants into the program. The program also leveraged its relationship with the Illinois Association of Regional Councils (ILARC), to 1) channel projects with EECBG

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funding into the PSEE Program, and 2) offer a 20% bonus for local government entities that applied for but did not receive EECBG funding.

Application Assistance Providers: The program implemented an application assistance pilot program in PY3. DCEO selected a small number of Application Assistance Providers (AAPs) through a competitive bidding process. These trade allies were listed on the program website and were paid a fee per kWh for helping customers through the application process (AAPs received one payment when a pre-approval application was submitted and a second payment when a final application was submitted). This pilot will not be continued in future years.

The following sections provide more information about these and other changes implemented in PY3.

Incentives

In order to induce participation, a few changes have been made to the program incentive structure in PY3. First the incentive cap was increased from \$200,000 in PY2 to \$300,000 in PY3. Despite this increase, over a quarter of participants report that the scope of their project was either limited (23%) or somewhat limited (3%) by the incentive cap.

Also, a "carve out" group was developed in PY3. This group (local governments, K-12 schools, and community colleges) received higher incentive levels than federal and state governments, and universities.

Promotions

The program offered two promotions in PY3, the IEN Lighting Special and the Non-EECBG 20% Bonus.

Illinois Energy Now Lighting Special

The program conducted a lighting special where incentives for certain lighting measures were increased by 20-50%. The PY3 lighting special leveraged the lessons learned in PY2: While the PY2 Green Spring Sale was very successful in increasing participation, the timing of the promotion – towards the end of the program year – resulted in a backlog of payment processing. As a result, the program planned its PY3 lighting special earlier in the program year (December through April).

Program staff found the lighting special to be a success, with over a quarter of Standard projects (29%) participating in this promotion.¹⁴ Of the 77 participants who completed the survey, 25

¹⁴ Based on a data excerpt entitled "Promotions," received from DCEO on August 22, 2011.

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received the lighting special incentive. Nearly all of them (88%) are aware that they participated in the promotion; 64% were aware at the time they decided to upgrade their lighting. Most lighting special participants found out about the promotion through a contractor, supplier, or vendor (45%), an e-mail (14%), or DCEO (14%).

Notably, lighting special participants are more likely to report that they are “very satisfied” (a rating of 10 on a scale of 0 to 10) than others with DCEO overall, the program overall, the incentive amount, and communication with DCEO staff. However, more than half of those who were aware of the increased incentive (52%) say they would have been likely to install exactly the same equipment with the regular incentive.¹⁵ Given these responses, it is unclear how effective the bonus incentive was in attracting new projects.

Non-EECBG 20% Bonus

In collaboration with the Illinois Association of Regional Councils (ILARC), the Standard and Custom Programs offered a 20% bonus for local governments in PY3 (the Non-EECBG 20% Bonus). This bonus was available for local governments that submitted Federal Energy Efficiency & Conservation Block Grant (EECBG) applications to their Regional Planning Agencies but were not selected for funding. The promotion was implemented to increase participation among local government entities. Based on program records, only four Standard projects (or less than 1% of all Standard projects) received this bonus.

Program Resources

Several changes took place in PY3 with regard to program resources:

Database development: According to program staff, the development of a program tracking database was a key activity in PY3. Deployment of a new database system was intended to reduce administrative burden and allow multiple staff to enter data into the database at the same time. Staff members agree that the database has allowed them to be more productive and efficient in terms of processing paperwork and generating reports. However, the development of the database, along with database user training, required substantial effort and time on the part of program staff. Moreover, program staff point out that entering all related project data into the system is more time consuming than the previous system (because more information is captured) and that many report automation capabilities that would be useful in conducting their work were not yet available in PY3.

¹⁵ “Likely” is defined as a score of 7 to 10 on a scale from 0 to 10, where 0 is “not at all likely” and 10 is “extremely likely.”

Increased Staffing: In PY3, DCEO hired more staff, bringing the total to nine staff members within the PSEE Program. Starting in PY2 and continuing in PY3, the PSEE Program have leveraged employees hired to support the implementation of the American Recovery and Reinvestment Act of 2009 (ARRA). These employees will transition full time to the PSEE Program as ARRA work phases out by January 2012. According to program staff, the additional resources have allowed the program to keep up with the increased volume of applications in PY3. However, other demands on staff's time (including the preparation for the integration of natural gas programs in PY4 and the processing of stimulus fund-related incentives) have continued in PY3.

Staffing Segmentation: In PY3, DCEO transitioned toward more staff specialization where individual staff members are assigned projects based on the sectors and utility service territories of the participant. This allows participants to work with the same staff member throughout their project and across years.

Participation and Application Process

The participation process has remained largely unchanged from previous years. Every Standard project still has to undergo several steps, including project application, final paperwork, payment processing, and incentive disbursement. In addition, certain projects are subject to pre- and post-inspections to qualify for an incentive.

Similar to previous years, the application process includes a pre-approval application (not required) and a final application. Only minor changes were made to the PY3 application process:

Carve-out Applications: Two separate application forms were developed for different sectors. As part of an effort to direct three quarters of its funding to specific sectors, a "carve-out" group (local government, K-12 schools, and community colleges) was developed. The carve-out group was provided with a distinct application form that reflects the higher incentive levels compared to non-carve-out entities (federal and state government and universities).

Project Timelines: In PY3 program participants were required to submit the final application within 45 days of project completion, as opposed to 60 days in previous years.

Application Assistance Providers: In PY3 the program implemented a pilot effort that used Application Assistance Providers (AAPs) to help customers with the application process. As part of this effort, the program selected a small number of trade allies and listed them on the program website. However, this pilot was not as successful as expected and will not continue in future years (see Trade Allies section for further details).

A majority of participants (73%) fill out the program paperwork themselves. Most of these customers (80%) feel that the application forms clearly explain the program requirements and

participation process. More than two-thirds of those who filled out the paperwork themselves (68%) rate the application process as easy, but some (11%) rate the application process as difficult.¹⁶ Participants in the lighting special are significantly more likely to rate the application process as easy than those who did not receive these incentives (89% vs. 58%). Overall, participants appear to find the application process more difficult than in PY2: in PY3, the average rating was 6.9 (in the “neutral” range) compared to 7.7 (in the “easy” range) in PY2.

In addition, the most common drawback to participating in the program, identified by participants, is that the paperwork is too burdensome (13%).

3.2.3 Program Partnerships

DCEO has developed a number of partnerships that help channel participants into the program and support participants through the participation process. Program staff emphasized the importance of the partnerships the program has maintained over the years and those that were newly developed in PY3.

Smart Energy Design Assistance Center

The Smart Energy Design Assistance Center (SEDAC) continues to be one of the program’s closest partners. SEDAC currently supports several key functions for the PSEE Program. These functions are generally conducted in collaboration with DCEO and supported by DCEO funding. They include producing and distributing marketing materials; educating public entities about the PSEE Program; and providing technical design and project implementation assistance. One DCEO staff member notes that expanding SEDAC’s role in the program in the future would be beneficial, and plans have been made to enlist SEDAC in the development of a trade ally network in PY4.

Results from the participant survey confirm that SEDAC plays a role in supporting DCEO and that it is effectively channeling participants into the PSEE Program. Nearly a third of program participants (29%) recall attending a SEDAC event that discussed the PSEE Program, and more than a quarter (26%) have received information about the PSEE Program through the SEDAC newsletter. In addition, 19% received technical assistance from SEDAC.

Of participants who used a contractor, most did not use a contractor affiliated with SEDAC (45%), or they did not know if their contractors is affiliated with SEDAC (49%). However, nearly

¹⁶ “Easy” is defined as a score of 7 to 10 on a scale from 0 to 10, where 0 is “very difficult” and 10 is “very easy.” “Difficult” is defined as a score of 0 to 3.

half of them (43%) find it important that their contractor is associated with SEDAC or an energy efficiency program.¹⁷

Illinois Association of Regional Councils

The program targets 75% of its funding towards local governments, K-12 schools, and community colleges. To achieve this level of participation, DCEO has partnered with other relevant public organizations, including the Illinois Association of Regional Councils (ILARC). As part of this effort, DCEO provided training to ILARC's Regional Planning Agencies on PSEE Program opportunities. ILARC guidelines required communities that received EECBG funds to also apply under the PSEE Program, where eligible.

Based on the program tracking database, the number of local government projects in PY3 increased by 88% compared to PY2. Program staff estimates that as many as 100 PSEE applications were generated through this partnership; however, some of these applicants dropped out of the program. The final PY3 program tracking database shows that a total of 81 standard and custom projects received EECBG or Non-EECBG 20% Bonus funding; 73 of these were standard projects (16% of all standard projects). Over a quarter (27%) of participants who say they received funding from another public source (n=26) say it was EECBG funding, and all say it was an important factor in their decision to implement the project.¹⁸

Illinois State Board of Education

In PY3, the Illinois State Board of Education (ISBE) began awarding Energy Efficiency Grants, dollar for dollar state matching grants providing up to \$250,000 for energy efficiency projects in schools. All school districts, charter schools, vocational centers, or public university laboratory schools are eligible. DCEO collaborated with ISBE by sharing marketing and outreach efforts and by channeling participants into each other's programs. Participants were then incentivized by each entity for eligible measures. In PY3, the number of K-12 school participants in the Standard Program increased by 23% compared to PY2.

Ameren Illinois Utilities and ComEd

In PY3, DCEO continued to leverage Ameren Illinois Utilities and ComEd's activities in promoting the PSEE Program. The three entities coordinate through monthly conference calls in which marketing and outreach and other issues are discussed. The utilities include DCEO at events and in outreach efforts. Like in previous years, DCEO helped fund, co-sponsor, and attend some larger PY3 outreach events with the utilities.

¹⁷ A rating of 7 to 10 on a scale of 0 to 10, where 0 is "not at all important" and 10 is "very important."

¹⁸ A rating of 7 to 10 on a scale of 0 to 10, where 0 is "not at all important" and 10 is "very important."

DCEO continues to conduct training sessions for utility account managers. Program staff remarked that account managers are more knowledgeable about and engaged in the PSEE Program each year. Some account managers provide marketing support while others simply refer public sector customers to DCEO.

Participant survey responses also indicate that account managers play a role, albeit a small one, in supporting the Standard Program:

- Nearly one third of program participants (31%) report having a utility account manager. Notably, ComEd PSEE participants are significantly more likely to have an account manager than Ameren Illinois Utilities customers (50% vs. 13%).
- A little less than half of these individuals with an account manager (43%) recall discussing the program with their account manager, and the same percentage recall receiving assistance with project implementation from the account manager.
- Only 3% of participants who have an account manager first found out about the program from the account manager.

3.2.4 Trade Allies

In the first two program years, DCEO leveraged the trade ally networks of SEDAC, ComEd, and Ameren Illinois Utilities by referring potential participants to their lists of qualified contractors. In addition, DCEO directs marketing and outreach efforts towards these networks to inform trade allies of the PSEE Program.

In PY3, DCEO continued to leverage these existing networks, but made an attempt at developing its own network of contractors through a pilot effort under the Building Industry and Training Education Program (BITE). As part of this effort, DCEO selected a small number of Application Assistance Providers (AAPs) through a competitive bidding process. These trade allies were listed on the program website and were paid a fee per kWh for helping customers through the application process (AAPs received one payment when a pre-approval application was submitted and a second payment when a final application was submitted). Overall, program staff did not find this pilot effort to be a productive use of program resources. While AAPs assisted with 5% of standard projects (based on program records), the quality of applications was not substantially improved. As such, the AAP pilot was discontinued. DCEO plans to develop a formal trade ally network in PY4.

The telephone survey with program participants included questions about their use of contractors, their contractors' affiliation with SEDAC or the utility trade ally networks, and satisfaction with their contractors. Responses to the survey show that trade allies play an important role in the implementation of projects and channeling of participants:

Most participants (88%) used a contractor or vendor for their project.

The majority of participants (81%) mention a trade ally as the resource who provided the most assistance in the design and specification of the installed equipment: More than half (58%) named a contractor, equipment installer, designer, or consultant, and 22% named an equipment distributor, supplier, or vendor.

The most common way participants in the PY3 lighting special learned about the promotion was through a trade ally (32%). Notably, those who participated in the lighting special are significantly more likely to have heard about the PSEE Program through a contractor or trade ally than those who did not (24% vs. 8%), indicating that this special offering induced trade allies to more actively promote the program.

While only 6% of participants who used a contractor reported that their contractor was affiliated with SEDAC, 43% say that such an affiliation (either with SEDAC or a utility program) is important.¹⁹

More than a quarter of participants (28%) first heard about the program from a trade ally.

The vast majority of PY3 participants report that their contractor was able to meet their project needs (88%) and that they would recommend their contractor to others (94%).

These findings support DCEO's plans to develop its own trade ally network in PY4. This network is planned to be similar to that of the utilities where trade allies are enticed to participate by being eligible for incentives themselves.

3.2.5 Program Marketing & Outreach

In PY3, the PSEE Program was re-branded as *Illinois Energy Now* (IEN). The branding effort included usage of the IEN logo on all program marketing materials and revisions to the program website. DCEO produced limited marketing materials in PY3. However, the majority of participants who recalled seeing program marketing materials (84%) found them to be useful.²⁰

Key marketing and outreach activities included:

Events: DCEO gave presentations at 52 workshops, conferences, and meetings in PY3 with an estimated total attendance of over 2,500. Target audiences included a range of public sector groups and organizations, as well as trade allies. Overall, 29% of participants recall attending

¹⁹ "Important" is defined as a score of 7 or higher on a scale from 0 to 10, where 0 is "not at all important" and 10 is "very important."

²⁰ A response of "very useful" or "somewhat useful."

one of DCEO or SEDAC's events, and 23% recall hearing about the PSEE Program at a utility event. However, only 5% *first* learned about the program at an event.

IEN Promotion: The IEN lighting special accounted for over a quarter of completed standard projects (29%). The most common way these participants learned about the promotion is through a trade ally (32%).

Webinars: DCEO continued conducting the webinars in PY3. According to program staff, webinar attendance has steadily grown during PY3. Some webinars were attended by up to 300 people. For example, the program held one well-attended webinar promoting the IEN Lighting Special directed at Ameren Illinois Utilities and ComEd trade ally contacts. Nearly a fifth of participants (18%) heard about the program during a webinar.

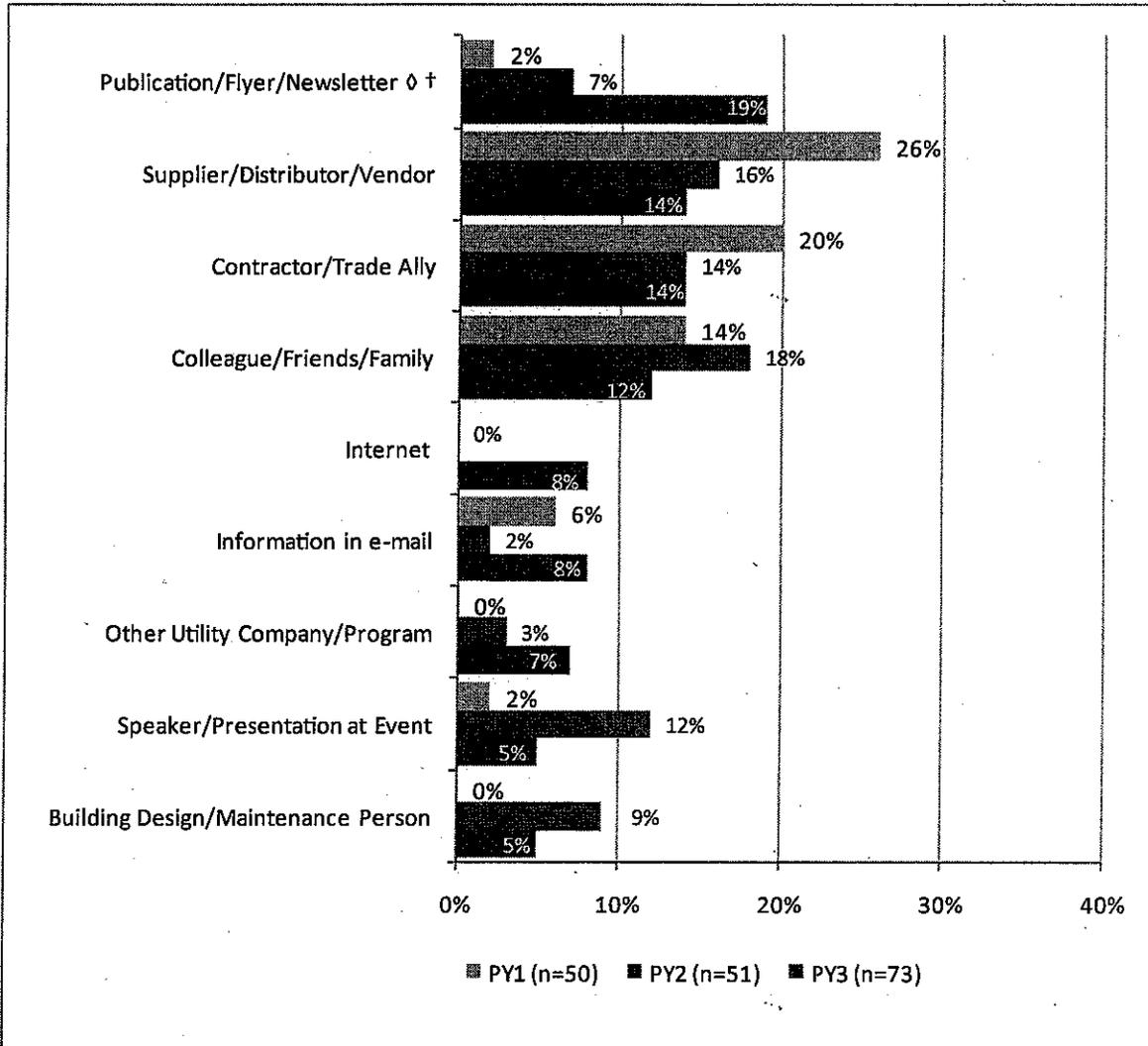
Elected Officials: DCEO made efforts to leverage the work of elected officials and representatives – such as state senators – by encouraging these officials to speak about the PSEE Program in their communities.

SEDAC Electronic Correspondence: DCEO continued leveraging SEDAC's electronic newsletter and contact list to disseminate news and information about the program. About a quarter of participants (26%) recall seeing information about the program in the SEDAC/DCEO newsletter and over half (56%) recall seeing information about the program in an email.

In PY3, participants first found out about the program from a range of sources. The contribution of contractors and other market actors in promoting the program (28%) supports DCEO's planned efforts to develop its own trade ally network. In PY3 a significantly greater share than in previous years (and the largest share, 19%) learned of the program through print materials (publications, flyers, and newsletters).

Figure 3-6 summarizes the ways participant first heard about the program.

Figure 3-6. How Participants First Learned about the Program (Unprompted)



[◇] Denotes a significant difference between PY3 and PY1 at the 90% confidence level.
[†] Denotes a significant difference between PY3 and PY2 at the 90% confidence level.
 Note: Response categories under 5% in PY3 have been omitted.
 Source: PY1, PY2, and PY3 CATI Participant Surveys

The survey also asked participants about various sources through which they might have obtained information about the program in the past. Key findings include:

Electronic media are an important way of disseminating information about the PSEE Program. Over half of participants (59%) have visited DCEO or SEDAC's websites to learn about the

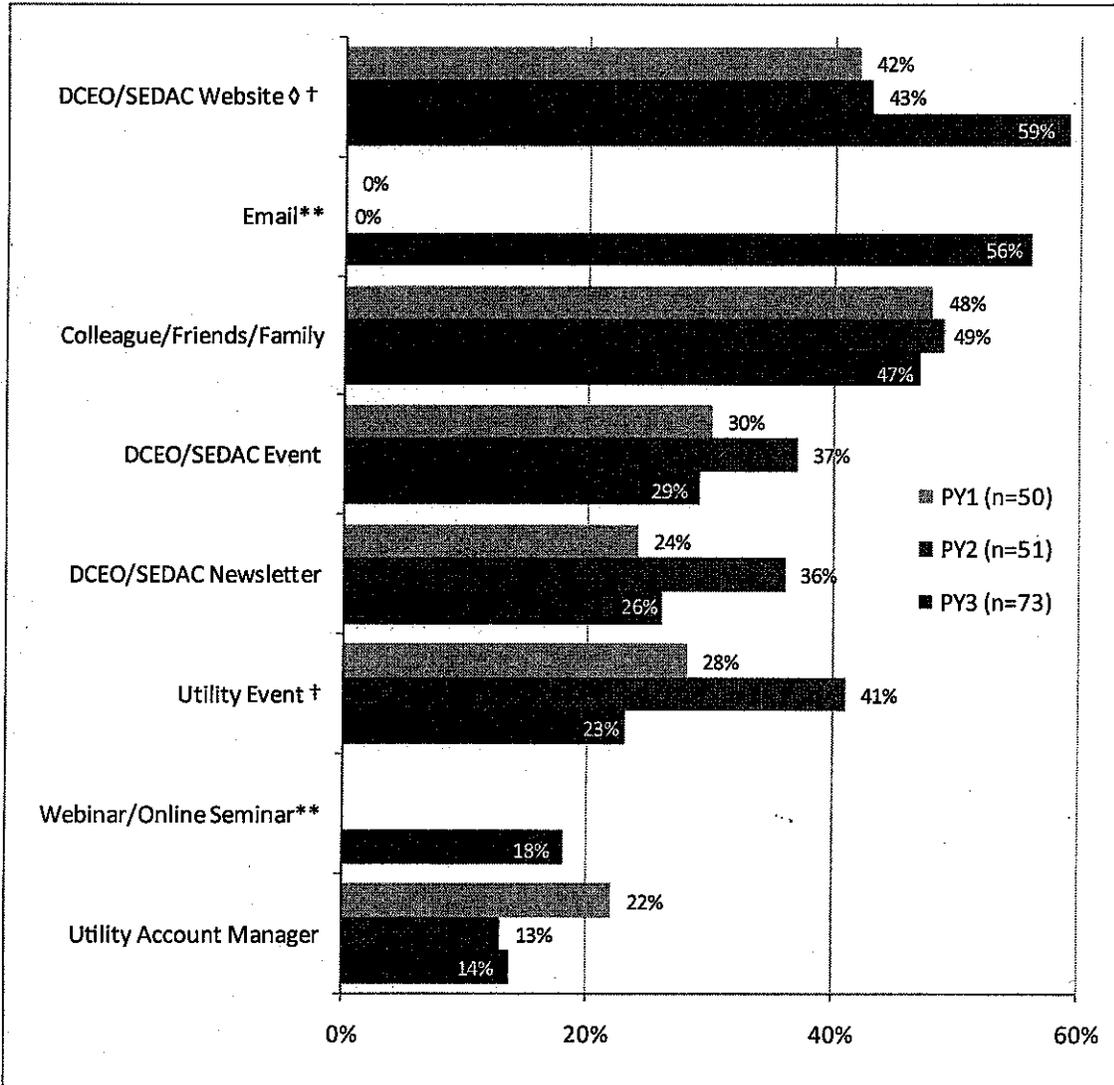
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program. This is a significant increase over previous years (43% in PY2 and 42% in PY1). Over half (56%) also received information about the program in an email.

Word-of-mouth continues to be an important way of sharing information about the program. Nearly half of PY3 participants (47%) have heard about the program from colleagues, friends, or family.

Participants in PY3 (23%) are less likely than those in PY2 (41%) to have heard about the program at an Ameren Illinois Utilities or ComEd event. Figure 3-7 summarizes these responses.

Figure 3-7. Sources of Information about the Public Sector Electric Efficiency Program (Prompted)



\diamond Denotes a significant difference between PY3 and PY1 at the 90% confidence level.
 † Denotes a significant difference between PY3 and PY2 at the 90% confidence level.
 Source: PY1, PY2, and PY3 CATI Participant Surveys
 **Channel not asked about in previous years.

E-mail continues to be the best way of reaching public sector entities with information about energy efficiency programs (44%), but the share of participants who prefer this outreach channel has declined compared to PY2 (65%). Many customers also cite flyers and other mailings (29%) as a preferred method of providing information. Figure 3-8 summarizes these findings.