

Evaluation of Illinois Energy Now Energy Assessments Program

June 2014 through May 2015

Prepared for:
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Executive Summary

This report presents the results of the impact and process evaluation of the Energy Assessments Program, an energy efficiency program administered by the Smart Energy Design Assistance Center (SEDAC) and operated by the University of Illinois Building Research Council in partnership with the 360 Energy Group. The program is sponsored by the Illinois Department of Commerce & Economic Opportunity (hereinafter referred to as the “Department of Commerce”). This report presents results for program activity during the period from June 2014 through May 2015, defined as electric program year 7 and natural gas program year 4 (EPY7/GPY4). Participants in the Energy Assessments Program receive a building energy assessment and an accompanying report that recommends measures to reduce energy consumption at the facility.

The main features of the approach used for the evaluation are as follows:

- Data for the evaluation were collected through a review of program materials, interviews with the Energy Assessments Program staff members, and surveys with the Energy Assessments Program participants.
- An engineering desk review was performed on program measures to verify net savings estimates associated with energy efficiency projects implemented by the Energy Assessments Program participants.

The population of potential energy saving projects was composed of facilities that had implemented measures during EPY7/GPY4 recommended in audit reports issued since EPY1. Periodic follow-up calls with participants completed by the Energy Assessments Program staff were used to identify facilities where recommended measures were implemented during EPY7/GPY4.

ADM reviewed the collected data on reported measure implementations that occurred during EPY7/GPY4 and then completed the following additional steps to develop program savings:

- Reviewed the Department of Commerce’s incentive database of public sector projects to determine which public sector facilities received program incentives; and
- Administered online surveys to determine whether or not private sector participants received incentives for implementing the measures through an investor-owned utility (IOU)¹ efficiency program, to collect additional details regarding the measures implemented by public and private sector participants, and to collect data to assess the program’s influence on the decision to implement the measure.

Savings were estimated for non-incented projects that were influenced by the energy assessments. Thus, estimated savings were net of the total gross program savings in that they excluded projects

¹ Refers to Ameren Illinois, ComEd, Peoples Gas, North Shore Gas, and Nicor.

that received incentives or were not influenced by the energy assessments. The savings impact estimation process involved a review of the available measure inputs and follow-up telephone discussions with the appropriate participant and facility management staff members. The evaluators referred to the Illinois Statewide Technical Reference Manual (TRM) Version 3.0 in order to estimate savings for each implemented measure.

When considering the Energy Assessments Program’s estimated energy saving impacts presented below, it should be noted that the program acts as a gateway to Department of Commerce’s custom and standard programs, as well as other incentive programs offered by the Department of Commerce and the Investor-Owned Utilities (IOUs)². As such, many SEDAC program participants implement recommended measures through one of the Department of Commerce programs or an IOU program. The energy savings associated with the implementation of these incentivized measures is attributed to the program under which they were incentivized and are not attributed towards the Energy Assessments Program to avoid double counting the energy saving impacts.

Table ES-1 presents the net kWh and kW savings by utility for the Energy Assessments Program during EPY7/GPY4. During EPY7/GPY4, the Energy Assessments Program net electric energy savings and peak demand reductions totaled 2,246,145 kWh and 397.39 kW.

Savings from measures implemented at facilities not receiving electricity service from an IOU are excluded from the reported energy savings.

Table ES-1 Summary of Net kWh and kW Savings Attributed to the Energy Assessments Program EPY7/GPY4

<i>Utility</i>	<i>Total EPY7/GPY4 Recommended kWh Savings</i>	<i>Total EPY7/GPY4 Recommended kW Savings</i>	<i>Total EPY7/GPY4Realized kWh Net Savings</i>	<i>Total EPY7/GPY4Realized kW Net Savings</i>
Ameren	2,686,168	931.0	271,225	122.88
ComEd	15,307,919	2,581.0	1,974,920	274.52
Total	17,994,087	3,512.0	2,246,145	397.39

Table ES-2 presents the net therm savings by utility for the Energy Assessments Program during EPY7/GPY4. During EPY7/GPY4, the Energy Assessments Program net gas energy savings totaled 23,249 therms.

² IOUs collectively refers to Ameren Illinois, ComEd, Peoples Gas, North Shore Gas, and Nicor Gas.

Table ES-2 Summary of Net Therm Savings Attributed to the Energy Assessments Program EPY7/GPY4

<i>Utility</i>	<i>Total EPY7/GPY4 Recommended Therm Savings</i>	<i>Total EPY7/GPY4 Realized Therm Net Savings</i>
Ameren	38,008	3,186
Nicor	190,860	12,371
Peoples	430,546	7,336
North Shore	99,790	356
Total	759,204	23,249

ADM presents the following findings and conclusions from the EPY7/GPY4 Energy Assessment Reports evaluation:

- **Attributable kWh Savings Increased from Previous Program Years while Attributable Therm Savings Decreased:** Attributable kWh savings for the Energy Assessments Program increased by 79% relative to the previous program years while therm savings decreased by 37% relative to the previous year.
- **The Energy Assessments Program Facilitates Other Public Sector Programs:** While the energy savings reported in this report are those that are attributable to the program, it is important to note that a primary function of the Energy Assessments Program is to facilitate participation in Department of Commerce and IOU programs. While the energy savings associated with this participation in other Department of Commerce or IOU programs is not claimable by the Energy Assessments Program, it is the product of the services by the Energy Assessments Program.
- **The Energy Assessments Program Remains Efficient in its Interactions with Participants:** Survey respondents indicate that interactions with SEDAC staff were efficient both throughout the process and during the on-site assessment. Eighty-four percent of respondents indicated they were satisfied with the steps required to participate in the program and 89% of respondents stated they were satisfied with the time required to complete the energy assessment.
- **Participants Indicated that the Energy Assessment Reports Are Highly Valuable and Actionable:** Ninety-four percent of survey respondents reported that they were “Very Satisfied” or “Somewhat Satisfied” with usefulness of the assessment report in assisting them with identify energy saving projects. In addition, none of the respondents indicated that their participation in the program left them unclear on how to apply for financial incentives for the recommended energy saving improvements and 94% of survey respondents indicated they were satisfied with the information provided on available financial incentives. These findings indicate that the Energy Assessment Program is

effectively providing clear and actionable information that drives participants towards Department of Commerce and IOU energy efficiency programs.

- **Overall Participant Satisfaction is High:** Ninety-five percent of survey respondents reported they were satisfied with their overall experience and none indicated that they were dissatisfied..

Overall the Energy Assessments program is operating well and performing a valuable role in generating energy savings through Department of Commerce and IOU incentive programs. In order to facilitate future evaluations of the program, ADM recommends the following augmentations to the tracking data collected through the program:

- **Collect Information on Receipt of Incentives for Implemented Measures:** SEDAC staff undertakes a large effort to maintain contact with energy assessment report recipients in the months and years after they received a report and to determine what energy saving actions they have taken. ADM was able to utilize the information collected by staff in evaluating the savings attributable to the program. However, ADM recommends that SEDAC staff also inquire about incentives the facilities may have applied for or received. This will enable the evaluators to maximize the utility of follow-up surveys and enable to the program to track its effectiveness in channeling participants to the incentive programs administered by the Department of Commerce and the IOUs.
- **Collect Specific Information on which ECRMs were Implemented:** ADM had some difficulty correlating information from SEDAC's follow up data to the actual energy assessments reports. ADM suggest that follow up data be recorded in a standard fashion, perhaps adding columns to SEDAC's database indicating a status for each ECRM that had been recommended.
- **Record Information for ECRMs that were not Implemented:** Standardizing how non-responses and instances of no implementations are recorded in the database would allow explicit identification of facilities SEDAC staff successfully made contact with and confirmed installations.

1. Introduction

This report presents the results of the impact and process evaluation of the Energy Assessments Program offered by the Illinois Department of Commerce and Economic Opportunity (hereinafter referred to as the “Department of Commerce”). This report presents results of program activity during the period from June 2014 through May 2015, defined as electric program year 7 and natural gas program year 4 (EPY7/GPY4).

1.1 Description of Program

The Energy Assessments Program is implemented by the Smart Energy Design Assistance Center (SEDAC) and provides participants with technical assistance to encourage the adoption of energy efficiency measures in nonresidential facilities. A key component of the program is the design assistance reports that detail energy cost reduction measures (ECRMs) that have been deemed appropriate for the participant. The reports list ECRMs individually, but rather than encourage the participant to invest in individual measures, the recommendations bundle cost-effective measures that result from interactive effects attainable when the building is analyzed as a whole. Cost-effective strategies are those bundles of ECRMs where the internal rate of return on the investment is greater than the discount rate and where the net present value of the investment is greater than zero.

The Energy Assessments Program provides services at no cost to participants. The program currently offers four levels of assistance:

- **Level 1 Initial Consultations:** This first level is designed to allow participants to have informative interactions with program staff and industry professionals in order to convey the benefits and overall structure of the Energy Assessments Program. Participants are able to ask questions and seek technical assistance regarding the potential for energy efficiency improvements in their facilities, and may consider the value of advancing to additional program levels.
- **Level 2 Energy Audits:** In this phase of the program, participants with existing facilities receive a site visit and in-depth consultation, while participants who are planning to renovate or construct new facilities receive a professional review of their building plans. SEDAC performs an analysis of building usage requirements and specific facility characteristics, resulting in a ranking of potential ECRMs. SEDAC then provides the results of this analysis to the participant along with detailed suggestions related to project design. The recommendations incorporate the whole-building approach to energy efficiency by grouping cost-effective measures that create synergistic effects when implemented together. Participants can then discuss the potential energy savings associated with proceeding to the design assistance phase of the program with SEDAC.

- **Level 3 Design Assistance:** This level is composed of an in-depth building analysis that is designed to identify the expected savings and costs from individual energy cost reduction measures (ECRMs) in the participant facility. The design assistance process incorporates energy simulation modeling, evaluation of each potential ECRM, and a life cycle cost analysis for the measures. SEDAC uses simulation software such as eQUEST and TRACE 700 to model facility baselines and measure the energy effects of implementing individual ECRMs. The participant is then presented with a feasibility report detailing the costs and energy benefits associated with the recommended energy efficiency improvements.
- **Level 4 Implementation Support:** This supplementary program phase is available to participants who encounter difficulties with implementing the projects identified through the previous program levels. In these cases, SEDAC provides guidance related to the financial and operational aspects of implementation, including contractor selection, final design specifications, and project cost management.

SEDAC staff maintain ongoing contact with participants who have received program services. This communication allows SEDAC to further assist participants' implementation of ECRMs and to potentially assist with the expansion of the scope or efficiency of the existing projects. Additionally, SEDAC uses information from past participant projects to inform future cost analyses and design assistance.

Throughout the process, SEDAC informs participants of available energy efficiency incentives that will reduce the cost of implementing the recommended measures. SEDAC directs participants to the Illinois Energy Efficiency Portfolio Standards (EEPS) incentive programs administered by the Department of Commerce and the Investor Owned Utilities (IOUs)³ in order to support their implementation of energy efficiency improvements. Conversely, some participants are referred to the Energy Assessments Program through their involvement with the EEPS incentive programs.

While in many cases the implementation costs of ECRMs recommended by the Energy Assessments Program are partly funded by a Department of Commerce or IOU program incentive, some participants elect to install measures without this financial assistance. ECRMs recommended by the Energy Assessment Program that are not implemented with a financial incentive represent the potential savings attributable to the Energy Assessment Program.

During the June 2014 through May 2015 period, 252 assessments were completed through the Energy Assessment Program.

³ IOUs collectively refers to Ameren Illinois, ComEd, Peoples Gas, North Shore Gas, and Nicor Gas.

1.2 Energy Assessments Program Savings Methodology Overview

This section describes the procedures and methods used by program staff to estimate energy savings associated with recommended measures and to track their subsequent implementation.

1.2.1 Procedures for Developing Savings Estimates for Recommended Measures

SEDAC applies the following steps to estimate the savings for the recommended efficiency improvements:

- 1) SEDAC constructs a baseline model using TRACE 700 or eQuest software products. These computer programs perform an hourly building energy simulation, which calculates the amount of energy (and the resulting utility cost of that energy) that the building is expected to use over an entire typical weather year. Model inputs include building geometry and orientation, wall and roof details, window area and type, type of heating and cooling system, type of lighting, local weather information, and schedules regarding lighting usage, internal equipment usage, and occupancy. This “baseline” computer model shows the buildings’ estimated annual energy consumption and utility cost.⁴
- 2) SEDAC performs a computer analysis of energy cost reduction measures (ECRMs). The recommended ECRMs are generated after reviewing and discussing the baseline building plans or inspection report. The baseline computer model is changed to reflect the implementation of these ECRMs, and the computer model generates the resultant energy consumption and expected utility costs. Some ECRMs are evaluated externally from the model since the model does not cover all circumstances.
- 3) The estimated savings and the additional costs of implementing all analyzed ECRMs are evaluated in a life cycle cost analysis.
- 4) ECRMs that have favorable economics are bundled together and re-modeled against the baseline for which any interactions between ECRMs are accounted.

1.2.2 Procedures for Tracking ECRM Implementation and Resulting Savings

The Energy Assessments Program staff complete regular follow-up telephone calls with program participants to provide ongoing implementation support and to track the implementation of the recommended measures. Measure implementation is tracked at the site level and notes are made regarding the date of the most recent contact, measures implemented since last contact and energy and cost savings associated with the implemented measures. Staff makes notes in the database

⁴ For existing buildings, the baseline is taken as the existing systems, and the full costs of the electricity cost reduction measures are analyzed. For new construction or renovation, the baseline is determined from design drawings and code requirements and the incremental costs of report recommendations are analyzed.

regarding which recommended measures were implemented and how extensively the recommended measure has been implemented (e.g., what percent of the recommended lighting retrofits have been implemented).

1.3 Impact Evaluation Approach

The overall objective for the impact evaluation of the Energy Assessments Program was to estimate the electricity and natural gas savings attributable to the program. The energy savings attributable to the program are those savings associated with any recommended measures that were implemented during EPY7/GPY4 at a participating site. It is important to note that the participant may have received the recommendation during any year the program has operated (i.e., since EPY1). Additionally, the attributable program savings are those that resulted from projects that (1) did not receive a Department of Commerce or IOU incentive and (2) were influenced by the program's technical assistance.

The M&V approach was based on the following activities:

- Review of SEDAC's follow-up call details on measure implementations;
- Review of the Department of Commerce's database of incentives for public sector projects;
- Cross-check of verified measures against previous years' evaluations⁵;
- Online surveys to collection additional information on measure implementations, the receipt of program incentives, and the impact of the program on the decision to implement the measures; and
- Extrapolation of site-level savings to the program.

1.3.1 Data Collection Procedures

SEDAC staff contacted program participants by telephone to determine the implementation status of the ECRMs recommended in the energy assessment. These participants were also asked about plans to implement ECRMs in the future, as well as for feedback on the program, such as their satisfaction with various program components. SEDAC attempted follow-up calls with a census of participants but was unable to speak with all of them. During EPY7/GPY4, SEDAC interviewed 236 facility staff and/or key decision makers that had received the Energy Assessments Program reports since EPY1.

SEDAC reported that 104 of the participating facilities contacted implemented at least one recommended ECRM during EPY7/GPY4. SEDAC reported 326 ECRM implementations

⁵ ADM had already accounted for savings for some of the reported EPY7/GPY4 implementations in the EPY6/GPY3 and EPY5/GPY2 evaluations. To recalculate savings for those implementations during PY7 would essentially be "double counting" savings.

occurred at these facilities during EPY7/GPY4. ADM cross-checked these ECRMs against the Department of Commerce's incentive database of public sector projects. Implemented ECRMs that received incentives through the Department of Commerce were eliminated from consideration from the sample frame. Further, ADM checked that savings from the implemented ECRMs had not been included in previous evaluations. ECRMs included in prior program evaluations were removed from the sample frame.

From this process, ADM identified 89 facilities (representing 250 ECRMs) that may have resulted in program attributable savings. Participant decision makers for these facilities were asked to complete an online survey. The survey instrument collected data on the following:

- Whether or not an incentive was received for the implementation of the measure;
- Additional information needed to calculate the energy saving impacts resulting from the implementation of the measure; and
- The program effect on the decision to implement the measure.

In total, 21 decision makers completed the survey. Of those, ADM received 13 complete survey responses for which savings had not been attributed to associated ECRMs in a previous years' evaluation, and ECRMs that respondents identified as implemented, regardless of incentive status. From these responses, ADM verified that eight facilities implemented 12 ECRMs without receiving an incentive.

ADM completed follow-up interviews with site staff to collect additional information as needed for the evaluation of program impacts. These interviews accomplished three tasks:

- First, the implementation status of all measures was verified by interviewed participants. Evaluation staff verified that the energy efficiency measures were indeed installed and that they still function properly.
- Second, evaluation staff collected additional information regarding any details necessary for savings calculation. Data were collected based on the measure input requirements of the data sources being referenced for the particular measure.
- Third, evaluation staff obtained any additional information needed on the project, such as project timing and other background details in order to further inform the savings estimation process.

In addition to participant data collection, ADM also requested that SEDAC provide measure-level analyses for the sample of facilities that ADM staff surveyed. ADM conducted a desk review of these analyses using the Illinois Statewide TRM Version 3.0.

1.4 Organization of Report

This report on the impact and process evaluation of the Smart Energy Design Assistance Center Program for the period June 2014 through May 2015 is organized as follows:

- Chapter 2 presents and discusses the methods used for estimating net savings for measures installed under the program.
- Chapter 3 summarizes comments made by interviewees related to their experience with the program.

2. Estimation of Net Savings

This chapter addresses the estimation of kWh savings, peak kW reductions, and therm savings resulting from measures implemented at participating facilities during the period of June 2014 through May 2015. This period is defined as electric program year 7 and natural gas program year 4 (EPY7/GPY4). Section 2.1 describes the steps taken to identify energy saving projects and calculate the resulting energy savings. Section 2.2 presents the program energy saving impacts.

2.1 Estimation of Site Level Net Savings

A series of procedures described below were used to determine the savings attributable to the program from the data collected by program staff on measure implementations. Table 2-1 summarizes the results of the steps taken and provides counts for the project population and sample sizes for the analysis of net savings attributable to the Energy Assessments Program during EPY7/GPY4.

Table 2-2 summarizes the information pertaining to measure implementation reported by survey respondents.

Table 2-1 Populations and Sample Sizes

<i>Metric</i>	<i>Public Sector</i>	<i>Private/No n-Profit Sector</i>	<i>Projects Total</i>	<i>Percent of Population of Assessments</i>
Population of Energy Assessment Facilities Interviewed by SEDAC, any PY	175	100	275	100%
SEDAC Follow-Up Interviews Completed in EPY7/GPY4	153	83	236	86%
Population of Facilities that Reported to SEDAC Implementing One or More Recommended Measures During EPY7/GPY4	64	40	104	38%
Facilities Sent a Survey for Receipt of Incentives	54	35	89	32%
Survey Respondents	14	7	21	8%

Table 2-2 Survey Respondents

<i>Metric</i>	<i>Public Sector</i>	<i>Private/No n-Profit Sector</i>	<i>Projects Total</i>	<i>Percent of Survey Respondents (n=21)</i>
Facilities that Verified Implementing a Measure	8	5	13	62%
Facilities that Implemented Measures without an Incentive	3	5	8	38%

The following sections describe the procedures used to estimate program energy saving and peak demand reduction impacts.

2.1.1 Develop Population of Facilities that Implemented Recommended Measures

SEDAC provided ADM with data on measures implemented during EPY7/GPY4 at facilities that received energy assessments during the EPY1 – EPY7/GPY4 period. This information was collected by SEDAC through follow-up interviews with program participants. In total, SEDAC collected information on recommended measure implementation status from 236 participants, or 86% of the 275 program participants they interviewed that have received assessments since EPY1. The 104 participating facilities that reported implementing one or more measures during EPY7/GPY4 comprised the population of projects with potentially program-attributable savings.

The full list of measures implemented was reduced based on receipt of an incentive or inclusion in a prior evaluation. Specifically, for public sector participants, ADM cross-checked the records of implemented measures against the Department of Commerce’s database of incentive program activity in order to remove any measures for which a record of receipt of a program incentive existed. Additionally, the list of implemented measures was checked against records from prior evaluations and implemented measures that were included in prior evaluations were also removed from the sample frame. These steps resulted in the removal of 15 facilities from the population.

2.1.2 Sample Design and Survey Administration

ADM used a stratified sampling approach to estimate the energy savings and peak demand reductions of the Energy Assessments Program. ADM stratified the population based on recommended savings at the measure level because not all measures for a given project were reported as implemented.⁶ Similarly, some measures reported as implemented may have received an incentive, and consequently, would not generate any savings attributable to the program.

Table 2-3 and

⁶ Whole projects were initially targeted as sample points for determining the sample size for the survey effort, as detailed in Table 2-1.

Table 2-4 present the population and sample design statistics for electricity and natural gas saving projects, respectively. Inspection of data on kWh and therm savings for individual measures obtained from SEDAC indicated that the distribution of electric and natural gas savings was generally positively skewed, with a small number of measures accounting for a high percentage of the estimated energy savings for the Energy Assessment Program, as reflected in the strata boundaries. Ratio estimation was used to estimate the savings for the Energy Assessments Program, with separate ratios calculated for electricity and natural gas saving measures.

Decision makers at the facilities represented in the population of projects were contacted to complete an online survey. The online survey was designed to collect information used to estimate energy saving impacts. Specifically, respondents were asked to:

- Verify the implementation of the measures
- Verify that incentives were not received for the measures implemented
- Provide responses to questions designed to measure whether or not the energy saving impacts are attributable to the program; and
- Provide additional information necessary to estimate the energy saving impacts associated with the measure.

The counts reported in the final sample design shown in Table 2-3 and

Table 2-4 are based on the number of measures reported as implemented by program participants that completed the survey described in Section 2.1.3. The actual precision of the kWh sample is $\pm 19.3\%$ at 90% confidence, while the actual precision of the therm sample is $\pm 43.3\%$ at 90% confidence.

Table 2-3 Population Statistics Used for Sample Design for Energy Assessment Program kWh Savings

	<i>Stratum 5</i>	<i>Stratum 4</i>	<i>Stratum 3</i>	<i>Stratum 2</i>	<i>Stratum 1</i>	<i>Totals</i>
Strata boundaries (kWh)	25000 <	25001 - 150000	150001 - 500000	500001 - 1000000	> 1000000	
Number of measures	114	103	28	3	2	249
Total kWh savings	907,989	6,435,142	7,041,317	2,100,781	2,412,784	18,898,013
Average kWh Savings	8,180	62,616	251,476	700,260	1,206,392	76,510
Standard deviation of kWh savings	7,218	32,658	79,809	175,728	33,548	149,044
Coefficient of variation	0.88	0.52	0.40	0.40	0.40	1.95
Final design sample	19	17	4	1	0	41

Table 2-4 Population Statistics Used for Sample Design for Energy Assessments Program Program Therm Savings

	<i>Stratum 4</i>	<i>Stratum 3</i>	<i>Stratum 2</i>	<i>Stratum 1</i>	<i>Totals</i>
Strata boundaries (therm)	650 <	651 - 25000	25001 -50000	> 50000	
Number of measures	195	48	5	2	250
Total therm savings	2,162	298,237	175,196	286,175	139,019
Average therm savings	13	6,213	35,039	143,088	3,371
Standard deviation of therm savings	72	5,501	8,548	127,403	16,907
Coefficient of variation	5.66	0.89	0.40	0.40	5.02
Final design sample	35	5	1	0	41

2.1.3 Estimate Savings from Implemented Measures

To estimate program saving impacts, ADM requested SEDAC’s savings calculations and supporting documentation for the measures that were implemented without an incentive. This information was augmented by data collected through the online survey. Specifically, respondents provided information on whether or not the measure was implemented exactly as recommended in the energy assessment report and if not, to describe in as much detail as possible how the recommendation was implemented including how the implementation differed from the recommendation. Lastly, respondents provided similar information on any other recommended measures that they implemented but that were not recorded in the SEDAC data.

Upon completion of data collection, the evaluators estimated the energy saving impacts of the measures. The procedures outlined in the Illinois Statewide TRM V3.0 were used to quantify energy saving impacts associated with the evaluated measures.

2.1.4 Assess Program Influence on the Measure Implementation

Decision maker survey responses were used to estimate the portion of the energy savings resulting from the implemented measures attributable to the program. Specifically, the portion of the measure savings attributable to the program was based on responses to the following two questions:

How important was your experience in the Energy Assessments Program to your decision to implement this measure, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important?

If you had not participated in the Energy Assessments 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?

The response to the first question cited above is Measure Attribution Score 1 and the response to the second question cited above is Measure Attribution Score 2. The program attributable savings were calculated in two ways.

The amount of savings to be attributable to the program is determined by taking the average of the Measure Attribution Score 1 and (10 – Measure Attribution Score 2) and dividing by 10. This number represents the percentage of savings attributable to the program for that measure and is multiplied by the measure’s total estimated savings. The product is the savings that are attributed to the program. Eight participant’s implemented a measure in EPY7/GPY4 without an incentive that had savings that were attributed to the program.

2.2 Net Savings Results

This section presents the results of the impact evaluation from the methodology described in the preceding sections.

When considering the Energy Assessments Program’s estimated energy savings presented below, it should be noted that the program acts as a gateway to Department of Commerce’s incentive programs as well as those offered by the IOUs to private sector participants. As such, many Energy Assessment Report program participants implement recommended measures through one of the Department of Commerce programs or an IOU program. The energy savings associated with the implementation of these incentivized measures is attributed to the program under which they were incentivized and are not attributed towards the Energy Assessments Program to avoid double counting of the energy saving impacts.

In total, eight respondent reported implementing a measure that resulted in electricity savings attributable to the Energy Assessments Program. The energy savings from these measures were extrapolated to the population of projects using the ratio estimation procedures described above. One respondent reported implementing natural gas saving measures that were attributable to the program.

As shown in Table 2-5, the net ex post electric savings for the EPY7/GPY4 program year totaled 2,246,145 kWh and 397.39 kW.

Table 2-5 Summary of Net kWh and kW Savings Attributed to the Energy Assessments Program EPY7/GPY4

<i>Utility</i>	<i>Total Recommended kWh Savings</i>	<i>Total Recommended Peak kW Reductions</i>	<i>Total Net Ex Post kWh Savings</i>	<i>Total Net Ex Post Peak kW Reductions</i>
Ameren	2,686,168	931	271,225	122.88
ComEd	15,307,919	2,581	1,974,920	274.52
Total	17,994,087	3,512	2,246,145	397.39

Table 2-6 presents the net ex post gas savings for EPY7/GPY4 program year. Gas savings totaled 23,249 therms.

Table 2-6 Summary of Net Therm Savings Attributed to the Energy Assessments Program EPY7/GPY4

<i>Utility</i>	<i>Total EPY7/GPY4 Recommended Therm Savings</i>	<i>Total EPY7/GPY4Realized Therm Net Savings</i>
Ameren	38,008	3,186
Nicor	190,860	12,371
Peoples	430,546	7,336
North Shore	99,790	356
Total	759,204	23,249

The approach used to calculate the program attributable savings presented above differs from the approach outlined in the Training and Technical Assistance Protocol presented in the Illinois Statewide Technical Reference Manual (TRM) Version 5.0, Vol. 4 (p.44). The approach outlined in TRM Version 5.0 applies a threshold approach whereby full measures savings are considered attributable to the program if the threshold is passed, and none are attributed if it is not. Specifically, under the TRM threshold approach, if the average of Measure Attribution Score 1 and (10 – Measure Attribution Score 2) is greater than 7, all measure savings are attributed to the program. Using this approach, only one project resulted in program attributable savings. The net savings based on this approach are displayed in Table 2-7.

One of the primary reasons cited for adoption of this threshold approach during discussions of the SAG Non-Residential NTG Working Group was conservation of evaluation resources - this is achieved by not necessitating impact evaluation of measures with relatively low program attribution.

Because the application of this method precludes counting the energy savings of partially-attributable measures not meeting the threshold (with Attribution Score <7), and the majority of program energy savings are accounted for by such measures, the application of the method erroneously minimizes estimated program energy savings. Because ADM quantified the energy savings of all wholly or partially-attributable sampled measures, it is analytically appropriate to include the impacts of all wholly or partially program-attributable measures in the program-level estimates of energy savings. For comparison purposes, the net electric savings attributable to the program using the threshold approach are displayed in Table 2-7. No net gas savings are attributable to the program using the threshold approach.

Table 2-7 Summary of Net kWh and kW Savings Attributed to the Energy Assessments Program EPY7/GPY4 using Threshold Approach

<i>Utility</i>	<i>Total Net Ex Post kWh Savings</i>	<i>Total Net Ex Post Peak kW Reductions</i>
Ameren	47,053	19.21
ComEd	136,029	17.85
Total	183,082	37.07

Cumulative savings for EPY4/GPY1, EPY5/GPY2, EPY6/GPY3 and EPY7/GPY4 are given in Table 2-8 below.

Table 2-8 Cumulative Attributed Net Savings by Program Year

<i>Program Year</i>	<i>Net Ex Post kWh Savings</i>	<i>Net Ex Post Peak Demand Reductions</i>	<i>Net Ex Post Therm Savings</i>
EPY4/GPY1	1,776,875	647.60	17,131
EPY5/GPY2	1,754,682	30.90	126,183
EPY6/GPY3	1,257,140	332.40	36,825
EPY7/GPY4	2,246,145	397.39	23,249
Cumulative Total	7,034,842	1,408.29	203,388

2.3 Summary of Impact Findings and Recommendations

ADM presents the following findings and conclusions from the EPY7/GPY4 Energy Assessment Reports evaluation:

- **Attributable kWh Savings Increased from Previous Program Years while Attributable Therm Savings Decreased:** Attributable kWh savings for the Energy Assessments Program increased by 79% relative to the previous program years while therm savings decreased by 37% relative to the previous year.
- **The Energy Assessments Program Facilitates Other Public Sector Programs:** While the energy savings reported in this report are those that are attributable to the program, it is important to note that a primary function of the Energy Assessments Program is to facilitate participation in Department of Commerce and IOU programs. While the energy savings associated with this participation in other Department of Commerce or IOU programs is not claimable by the Energy Assessments Program, it is the product of the services by the Energy Assessments Program.

Overall the Energy Assessments program is operating well and performing a valuable role in generating energy savings through Department of Commerce and IOU incentive programs. In order to facilitate future evaluations of the program, ADM recommends the following augmentations to the tracking data collected through the program:

- **Collect Information on Receipt of Incentives for Implemented Measures:** SEDAC staff undertakes a large effort to maintain contact with energy assessment report recipients in the months and years after they received a report and to determine what energy saving actions they have taken. ADM was able to utilize the information collected by staff in evaluating the savings attributable to the program. However, ADM recommends that SEDAC staff also inquire about incentives the facilities may have applied for or received. This will enable the evaluators to maximize the utility of follow-up surveys and enable to the program to track its effectiveness in channeling participants to the incentive programs administered by the Department of Commerce and the IOUs.
- **Collect Specific Information on which ECRMs were Implemented:** ADM had some difficulty correlating information from SEDAC's follow up data to the actual energy assessments reports. ADM suggests that follow up data be recorded in a standard fashion, perhaps adding columns to SEDAC's database indicating a status for each ECRM that had been recommended.
- **Record Information for ECRMs that were not Implemented:** Standardizing how non-responses and instances of no implementations are recorded in the database would allow explicit identification of facilities SEDAC staff successfully made contact with and confirmed installations.

3. Process Evaluation

ADM surveyed 21 decision makers who received energy assessment reports during the EPY1-EPY7/GPY4 time period. Survey respondents provided information about their experience with the Energy Assessments Program in addition to the information provided regarding program energy saving impacts.

3.1 Reasons for Not Applying for Program Incentives

Decision makers were asked why they did not apply for program incentives to implement the recommended measures to better understand what factors affected the decision to apply for incentives. Most respondents, however, indicated that they did not know why their organization did not seek incentives for the project, which could indicate poor recall of the implementation process or that respondents were not involved in decisions on project financing.

For the project that resulted in the largest savings, the decision-maker indicated that they had applied for an incentive but that program funding was exhausted.

To assess the effectiveness of the program in channeling participants to the incentive programs, respondents were asked whether or not the information provided through the program made it clear on how to apply for program incentives. As shown in Table 3-1, all respondents that provided a rating of the clarity indicated that the information was at least somewhat clear. This finding suggests that the program is providing sufficient information to effectively channel participants into applicable incentive programs.

Table 3-1 Information about Incentives in the Energy Assessment Reports

<i>Question</i>	<i>Very clear</i>	<i>Somewhat clear</i>	<i>Neither Clear or Unclear</i>	<i>Somewhat unclear</i>	<i>Very unclear</i>	<i>Don't know</i>
Was it clear how you could apply for financial incentives for the recommended energy saving improvements? (n=19)	47%	47%	0%	0%	0%	5%

3.2 Future Measure Implementation Plans

Decision-makers were asked about plans to implement the remaining recommended measures at some point in the future. Table 3-2 summarizes the responses. As shown, most respondents indicated that they plan on implementing at least some of the measures in the future.

Table 3-2 Plans to Implement ECRMs in the Future

<i>Question</i>	<i>Yes</i>	<i>Some of them</i>	<i>No</i>	<i>Don't Know</i>
For the measures that you have not implemented, do you intend to implement them in the future? (n = 18)	28%	50%	0%	22%

Respondents that affirmed future intentions to implement recommended measures were asked what factors have prevented them from implementing the measures. As shown in Table 3-3, a lack of funding or other priorities for capital improvement projects were cited as barriers to implementing the measures by 50% of respondents. Additionally, delays in the approval process were cited by another 14% of participants and 14% indicated that the savings were not sufficient to make the project a priority. Other reasons for having not yet implemented the recommended the measures included lack of available funding from incentive programs (n=2) and uncertainty related to changes in facility operations or ownership (n=2).

Table 3-3 Barriers to Implementing Recommended ECRMs

<i>Question</i>	<i>Delays in getting approval for the project(s)</i>	<i>Insufficient funds to implement the project(s)</i>	<i>Other priorities for capital improvement projects</i>	<i>Savings not great enough to make the project a priority</i>	<i>Other</i>	<i>Don't know</i>
For the measures you are planning to implement, why have you not implemented them yet? (n = 14)	14%	36%	14%	14%	36%	7%

3.3 Decision-Maker Satisfaction with the Energy Assessments Program

Survey respondents indicated their satisfaction with various aspects of the program and the program overall. The responses are summarized in Table 3-4. Overall, respondents indicated a high level of satisfaction with the program. In particular, 89% of respondents were very satisfied with the program overall and the professionalism of the SEDAC representative who performed the assessment. Additionally, a clear majority of participants

Only one respondent indicated any degree of dissatisfaction. Specifically, this respondent indicated that he or she was somewhat dissatisfied with the time required to complete the building assessment. When prompted to describe why they were dissatisfied with this program aspect, the respondent stated the following:

“By the time we received our energy report from SEDAC we had already completed some of our projects and the report seemed less relevant.”

Table 3-4 Decision-Maker Satisfaction with the Energy Assessments Program Aspects

<i>Program Aspect</i>	<i>Very Satisfied</i>	<i>Somewhat Satisfied</i>	<i>Neither Satisfied nor Dissatisfied</i>	<i>Somewhat Dissatisfied</i>	<i>Very Dissatisfied</i>
The steps you had to take to get through the program (n = 18)	56%	28%	17%	0%	0%
The amount of time it took to complete the building energy assessment (n = 18)	61%	28%	6%	6%	0%
Professionalism of the SEDAC staff or representative who performed the assessment (n = 18)	89%	11%	0%	0%	0%
The usefulness of the assessment report for identifying ways to save energy (n = 18)	72%	22%	6%	0%	0%
Information provided on financial incentives that are available for implementing recommendations (n = 18)	67%	17%	17%	0%	0%
Overall experience with the Energy Assessments Program (n = 18)	89%	6%	6%	0%	0%

3.4 Additional Feedback from Respondents

Respondents also provided their overall impressions of the program. All of the feedback was positive and respondents praised the comprehensiveness of the audits and usefulness of the information provided. The specific comments made are compiled below.

“I do like how they provide the full report, but also provide a bullet point section.”

“Uncertain budgets are making it hard to commit funds to energy projects at this time but I am looking at low cost ways to do the work by on staff personnel.”

“Great program.”

“It would be nice if SEDAC or [the Department of Commerce] could find ways for public-nonprofit agency partake in some of the electrical incentives offered through ComEd. Even though our bills don't say ComEd they are the ones that deliver that service.”

“This is a program that makes sense. Education and recommendations for organizations to save money on energy; more times than not, it shows them how to pay for improvements out of savings on the energy. It saves the businesses money and it helps with energy savings on a level that is smart for the environment. [This is] a program that should continue.”

3.5 Summary of Process Findings

ADM presents the following findings from the EPY7/GPY4 Energy Assessment Reports evaluation:

- **The Energy Assessments Program Remains Efficient in its Interactions with Participants:** Survey respondents indicate that interactions with SEDAC staff were efficient both throughout the process and during the on-site assessment. Eighty-four percent of respondents indicated they were satisfied with the steps required to participate in the program and 89% of respondents stated they were satisfied with the time required to complete the energy assessment.
- **Participants Indicated that the Energy Assessment Reports Are Highly Valuable and Actionable:** Ninety-four percent of survey respondents reported that they were “Very Satisfied” or “Somewhat Satisfied” with usefulness of the assessment report in assisting them with identify energy saving projects. In addition, none of the respondents indicated that their participation in the program left them unclear on how to apply for financial incentives for the recommended energy saving improvements and 94% of survey respondents indicated they were satisfied with the information provided on available financial incentives. These findings indicate that the Energy Assessment Program is effectively providing clear and actionable information that drives participants towards Department of Commerce and IOU energy efficiency programs.
- **Overall Participant Satisfaction is High:** Ninety-five percent of survey respondents reported they were satisfied with their overall experience and none indicated that they were dissatisfied.