Commonwealth Edison Company's

Energy Efficiency / Demand Response Plan

Annual Report

Plan Year 2

June 1, 2009 – May 31, 2010

March 2011

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Executive Summary

This report provides a comprehensive update on the second year[1] performance of ComEd's Energy Efficiency / Demand Response Portfolio. It is intended to provide an outline of the successes and challenges encountered during Plan Year 2 (PY2), as well as highlight adjustments and changes that will be implemented to improve overall portfolio performance in Plan Year 3 (PY3).[2] A brief summary of PY2 DCEO-sponsored program results in ComEd's service territory is also provided. Section IX describes differences in expectations ComEd has identified with this year's independent evaluation reports.

ComEd's Plan proposed a portfolio of initiatives that targeted both residential and business customers. Collectively, these initiatives ensured that program opportunities were available to all ComEd's customers. Three programs undergoing startup activities in Program Year 1 began full operations in Program Year 2. The ComEd portfolio included several other activities considered as development and educational initiatives. The resultant portfolio of initiatives was collectively packaged under *the Smart Ideas* banner.

Residential Initiatives:
- *Residential ENERGY STAR® Lighting*
- *Appliance Recycling*
- *All-Electric Efficiency Upgrade*
- *Single Family Home Performance*
- *Central AC Efficiency Services (CACES)*
- *Central Air Conditioning Cycling*

Business Initiatives:
- *Prescriptive and Custom Incentives*
- *Retro-Commissioning*
- *New Construction*

ComEd's Plan was designed to address several key objectives –

- Create value for customers through a range of customer energy efficiency initiatives
- Meet statutory goals specified in the law while adhering to the spending screens
- Lay a solid foundation for demand-side management programs going forward by investing in the program infrastructure needed to support comprehensive and integrated approaches to energy efficiency and demand response
- Develop a diverse portfolio of programs that minimizes portfolio risk while offering numerous energy efficiency opportunities across all customer groups

[1] The second plan year runs from June 1st, 2009 through May 31st, 2010.
[2] Evaluation reports for Plan Year 2 programs are attached at the end of this report.

- Lay the groundwork for demand-side innovation in technology, practice and the integration of energy efficiency and demand response
- Create easy ways for our customers to participate in the programs

In accordance with the provisions of Section 12-103 of the Public Utilities Act ("Act"), 220 ILCS 5/12-103, that took effect August 28th, 2007, ComEd was prescribed second-program-year annual energy efficiency and demand reduction targets of 312,339 MWh and 11.1 MW, respectively.

ComEd originally set a net MWh target of 325,674 MWh for Plan Year 2. The higher target was set due to the uncertainty surrounding how the savings target should be interpreted and how independent evaluation would impact our reported results. After receiving PY1 evaluation results, ComEd reset its PY2 targets which increased its Gross MWh targets for individual programs, but lowered the projected Net MWh target to 315,224 MWh.

The PY2 portfolio budget was $72.5M initially, of which ComEd's portion was $52.7M. Due to the annual Spending Screen adjustments, the final PY2 budget was set at $67.4M, of which the ComEd portion was $48.2M[3]. The legislation requires ComEd to allocate a portion of the portfolio's funding and energy efficiency and demand response (EEDR) targets to the Department of Commerce and Economic Opportunity (DCEO) for the administering of EEDR programs to public sector and low-income customers[4], performance data related to these areas are included in Section VII of this report.

[3] $19.2M (25%) of the total portfolio budget was designated for the Department of Commerce and Economic Opportunity ("DCEO") consistent with the Act to support programs for governmental facilities, public schools and low income customers.

[4] DCEO programs are as follows:
- Public Sector Solutions - Public Sector Prescriptive/Custom Incentives, New Construction, Retro-commissioning and Lighting for Learning
- Low-Income Solutions - New Construction and Gut Rehab, Energy Efficient Moderate Rehab, Energy Efficient Single-Family Remodeling, Energy Efficiency Direct Install
- Market-Transformation and Educational Programs - Smart Energy Design Assistance Program, Large-Customer Energy Assistance Program (LEAP) and Building Industry Training & Education Program

Plan Year 2 Results

ComEd launched the *Smart Ideas* portfolio of energy efficiency incentives on June 1, 2009, and by May 31, 2010 had exceeded its statutory targets for energy efficiency and demand response. Table ES-1 represents energy efficiency savings achieved for PY2. In addition to program activity in PY2, there is recognition of savings from the deferred installation of CFL bulbs purchased during PY1 from Residential ENERGY STAR Lighting and Small C&I Intro kit program ("CFL Carryover"). This data is sourced from independent evaluator Navigant's final report.

Table ES-1

Energy Efficiency Initiative	Verified Net MWH Savings Achieved
Residential ENERGY STAR Lighting	202,557
Appliance Recycling	32,624
All-Electric Efficiency Upgrade	1,840
Single Family Home Performance	638
Central AC Efficiency Services (CACES)	1,964
C&I Prescriptive and Custom Incentives	209,151
C&I Retro-Commissioning	6,574
C&I New Construction	803
CFL Carryover	15,981
Total Net MWH Saved	**472,132**
Statutory Goal	**312,339**
MWHs over Goal	**159,793**
MWHs (% of Goal)	**151.2 %**

Smart Ideas also delivered 13.6 MW of demand response through its Central Air Conditioning Cycling initiative by adding over 9,400 new participants, exceeding its statutory goal of 11.1 MW, or by 22%.

In addition to achieved savings in PY2, an additional 14,875 MWH was available as carryover from PY1. The ICC Order for Docket 07-0540 allows for energy savings to be "banked" for future use, but limited to 10% of the energy savings required by statute in the year it is to be "banked".

ComEd's statutory requirement for PY1 was 148,842 MWH, and ComEd's verified savings were 163,717. This allowed ComEd to bank 14,875 versus the PY1 potential of 14, 884 MWH. For PY2, the amount available for banking is limited to 10% of the statutory requirement, so ComEd plans to bank an additional 31,324 MWH, although its verified results exceeded the statutory requirement by 159,793 MWH.

Table ES-2
ComEd Portfolio Banking (Net MWH)

Plan Year	Net Results	Statutory Goal	Potential Banking	Actual Banking	Cumulative Banked
PY1	163,717	148,842	14,875	14,875	14,875
PY2	472,132	312,339	156,795	31,234	55,685

Actual banking in a given year is limited to the lesser of savings exceeding statutory goal or 10% of statutory goal. Unused savings in the "bank" can be forwarded into the next year.

Highlights of ComEd *Smart Ideas'* PY2 include:

- ComEd's PY2 portfolio was very cost effective. Based on Illinois' version of the Total Resource Cost (TRC), which includes societal benefits for CO2 emissions reduction, ComEd's PY2 portfolio TRC was 2.84 versus the requirement of 1.0[5].
- Growth in the energy efficiency portfolio brought an additional **18 direct jobs to the ComEd service territory** on top of the 54 direct jobs from PY1 and helped to lay a foundation for a robust energy efficiency implementation industry in Northern Illinois. These estimates do not include the installation labor required for many of the energy efficiency measures (i.e. indirect jobs)
- **More than 8.2 million compact fluorescent lamps** (CFLs) were **sold** through **12** participating retail chains and more than **600** individual store locations
- **Nearly 25,000 inefficient appliances (i.e., refrigerators, freezers, room air conditioners)** were **removed from the ComEd system** and recycled in an environmentally friendly manner
- **The state-of-the-art appliance recycling facility** opened last year in Illinois, expanded its operations to support the increased activities of the Appliance Recycling initiative

[5] For the Illinois TRC calculation, CO2 reductions were valued at $0.013875/kWh

- **Over 4,700 homes** received low-cost energy efficiency product upgrades as part of the All-Electric Efficiency Upgrade (i.e. Multi-Family) and Single Family Home Performance initiatives
- **More than 320 trade allies enrolled** in *Smart Ideas'* Commercial and Industrial (C&I) Prescriptive and Custom Incentives initiative
    - **In December 20009,** ComEd implemented a wait list for Prescriptive lighting projects, but all eligible projects were eventually funded before May 31st
    - **More than $17.3 million were paid in incentives for over 2,100 projects**, resulting in $80.9 million invested in energy efficiency upgrades in the business sector
- The successful deployments of two research initiatives to investigate new potential energy efficiency resources were finalized (the Home Energy Report and the ComEd Community Energy Challenge). The Home Energy Report was proposed as a program starting in PY4, and findings from the Community Energy Challenge will help shape future community based programs.

Key Challenges in Plan Year 2

Given PY1 results for realization rates and NTG ratios, PY2 targets had to be adjusted to deal with evaluation uncertainty. Gross MWh PY2 targets were increased in many programs, while their expected net savings were reduced from original plans

The lack of a meaningful energy efficiency program history in Illinois continues to present ComEd with significant uncertainty regarding anticipated program performance and interpretation of results by the independent evaluator. As a result, the *Smart Ideas* portfolio was designed to over-achieve its second-year goals to ensure statutory targets would be met. By December 2009, six months into PY2, final PY1 results were known and evaluation parameters were generally lower than expected. Concerned over the potential of additional downside from evaluation, ComEd increased its individual program installation targets, and therefore gross MWh savings. These mid-year adjustments required shifting resources within the portfolio.

The economy was a general challenge across all programs, especially apparent in C&I programs. Energy efficiency is considered a positive by customers, however, incentives were

not always large enough to initiate activity. ComEd feels more customers will consider energy efficiency projects once the economy improves.

Other challenges occurred during the course of the plan year and included:

- Managing business customer and trade ally expectations and concerns after strong demand in PY1 and wait listing projects resulted in a slow restart of the Prescriptive and Custom Incentive non-lighting initiatives
- Maintaining participation throughout the year for the Appliance Recycling program. ComEd applied its most intensive marketing efforts to Appliance Recycling, and finally achieved strong customer program recognition
- Initiating the Central Air Conditioning Efficiency Services (CACES) program in summer of 2009, which turned out to be an extremely mild summer. The program was also likely affected by the recessionary economy, prompting customers to defer air conditioning services

I. A Note on Evaluation Methodology

Uncertainty in results from retroactive evaluation

After PY1, it became obvious that apparent success could be reversed during the evaluation process. Although ComEd exceeded its PY1 goals, we thought they were exceeded handily, but some initial program results included unexpected setbacks. Fortunately, some conservative estimates for business lighting hours of operations were very conservative and verified operations resulted in additional savings.

From a program viewpoint, retrospective application of evaluation parameters, (i.e. realization rate and net-to-gross ratio) are risks which can rarely be mitigated. The most controllable action an implementer has is to increase output through more projects or additional measures per project. However in the current Illinois framework, evaluation largely begins after the program year ends – so output can no longer be increased. The other options are pre-screening applicants to determine their exact savings and their reasons for participating in a given program. In many cases ComEd does pre-screening activities, but must balance these activities with the promotion of energy efficiency measures in order to have customers participate.

In mid-year PY2, given the unexpected results from PY1, ComEd increased its Prescriptive/Custom project target from 1,000 to 1,900, and the Residential CFL bulb sales target from 4.2 million to 7.8 million bulbs. Although these are ComEd's two largest programs, this adjustment required a considerable ramp up in promotion and distribution. Although admirable from an implementation viewpoint, this does not enhance multi-year planning for the portfolio. In order to provide the necessary funding, non-kWh activities (e.g. education and outreach) were reduced.

Determining Evaluation Components for Illinois

Each program measure has various components to it. The intent is to estimate a typical savings for an installed measure. A simple example is the savings calculation for energy efficient light bulbs. The first component is delta watts or the difference between the power draw of the original light bulb and the energy efficiency bulb replacing it. Replacing a 60 watt incandescent with a 13 watt results is a delta watts of 47. The next component is Hours of Use (HOU) which is the average hours a bulb would be turned on in a day. The HOU with the incandescent bulb is assumed to be the same as with the energy efficient bulb since they both perform the same function. ComEd's assumed HOU is 2.34 hours. The resulting annual savings is delta watt X HOU hours/day X 365 days/year = 47 X 2.34 X 365 = 40 kWh/year for replacing a 60 watt light with a 13 watt CFL.

Estimation of savings associated with water heating efficiency start by determining the reduction in water used with efficiency measures such as flow restrictors. Next is determining the amount of energy needed to heat the water. Since homes do not have hot water meters, evaluations try to estimate the average amount of hot water a home will consume and the reduction in that hot water realized with the installation of various water measures. The energy savings would be the energy required to heat that amount of hot water reduced. This energy reduction results in electric savings with electric hot water heaters or gas savings with gas hot water heaters.

In both of these examples, much of the measurement is made indirectly. For example, while ComEd sold over 8.2 million CFLs in PY2, neither ComEd nor its evaluators can verify the replacement bulb for each CFL or the hours that bulb is used. Similarly we cannot verify how much hot water is being used by each household. These estimates require understanding behavioral tendencies of the end users. These behavioral tendencies can be quite different

across the country. Customers might be affected by their pre-disposition to energy efficiency, or environmental factors such as harsh winters. The argument can be made that better understanding of the utility's own service territory will enable better evaluations. Better understanding can be helped through leveraging research work conducted elsewhere, but the end users are still local.

For these reasons, ComEd proposes that evaluations conduct overview verification of results, but also focus on developing strong evaluations of components, which can then be used for multiple years. Evaluation budgets are never sufficient to allow complete evaluations of all aspects of all programs. Each year allocations are made to balance between programs to provide high confidence in total portfolio savings. However, often many portions are performed at a cursory level. In PY2, ComEd's Custom program evaluation conducted only 10 site visits and 20 Net-to Gross surveys to represent 340 projects. This suggests there can be a large variability between evaluated results and actual results. ComEd prefers performing an evaluation at a higher confidence level and using those results in future years, allowing the saved evaluation costs to be used for more in-depth evaluation in other areas.

In Section IX, ComEd has identified various areas where it disagrees with the independent evaluator's findings in the PY2 Evaluation Reports. Often the disagreements result from differences in perceived levels of evaluation effort. Evaluation effort is highly tied to available budgets. In particular, ComEd objects to making large changes in parameters based on limited sampling or without ensuring their applicability to the ComEd service territory.

II. Smart Ideas for Your Home℠

Smart Ideas for Your Home℠ is comprised of a diverse set of residential incentives, each targeting either a specific energy end-use such as lighting or a high-consumption customer group such as homes with electric space heating. In Plan Year 2, *Smart Ideas for Your Home* achieved 239,623 MWh of energy savings, corresponding to 153% of its target.

The following sections discuss each of the program's initiatives in greater detail.

Residential ENERGY STAR® Lighting

Program Description

ComEd's Residential ENERGY STAR Lighting initiative *(originally known as Residential Lighting)* offered residential customers instant discounts on select ENERGY STAR CFLs and fixtures purchased at participating retailers.

The initiative offered discounts on both traditional spiral CFLs and specialty CFLs, such as bathroom globes, reflectors and dimmable lamps. Discounted fixtures included desk lamps, ceiling flush mounts and outdoor lamps.

Participating Retailers

Type of Store	No. of Stores	No. of CFL Bulbs Sold
Big Box / Do-It-Yourself	246	3,766,273
Warehouse	34	3,730,820
Small Hardware	142	427,239
Grocery	104	287,804

Discounts were designed to partially offset the higher cost of ENERGY STAR lighting products relative to comparable incandescent products and were administered primarily through a markdown on the price manufacturers charge to retailers. Point-of-sale coupons were used in the case of some small retailers.

ComEd selected Applied Proactive Technologies, Inc. (APT) to implement this program. Energy Federation Incorporated (EFI), an APT subcontractor, handled the program's data management and coupon redemption processing where applicable.

To compliment product availability, the initiative included an education element through the implementation of in-store point-of-sale material and product demonstrations conducted by *Smart Ideas* field representatives. The latter effort enabled consumers to directly discuss energy-efficient technologies with *Smart Ideas* representatives and receive information specific to their needs or concerns.

CFL Recycling

ComEd partnered with three major hardware retailers to educate consumers on the proper techniques of CFL disposal and offer CFL recycling free of charge to customers. As a result, approximately 110,000 CFLs have been recycled since program inception.

Plan Year 2 Activity

As stated earlier, by mid-year in PY2 the targeted sales of CFLs were raised from 4.2 million to 7.8 million. This was accomplished through the ramp-up of distribution channels and field representation. Since PY1, the number of participating storefronts increased 28%, field representatives increased 75%, and in-store demonstration increased 82%. This program exceeded its revised, aggressive target by over 400,000 bulbs.

In addition to bulb sales, the CFL fixture targets were increased from 34,000 to 70,000. Final sales were 72,240 in PY2.

Several program enhancements were adopted to manage this more aggressive goal, including:

- Adding two new retailers to the program
- Hiring two additional field representatives to service additional retail locations
- Increasing the number of ENERGY STAR lighting products eligible for discount
- Increasing the incentive on select CFL models
- Adding significantly more ENERGY STAR lighting fixture products eligible for discount
- Tailoring retailers' in-store point-of-purchase materials to increase shopper awareness of the products while adhering to retailer's marketing requirements
- Increasing the number and frequency of in-store retail demonstrations
- Getting product displays and shelf inventories placed in more visible areas

Table III-1 presents the initiative's accomplishments.

Table III-1
Program Metrics

Program Statistics	Quantity
Standard CFLs sold	7,377,518
Specialty CFLs sold	834,618
Total CFLs sold	8,212,136
Fixtures sold	72,240
Participating storefronts	660
Field reps hired	14
Field rep demonstrations	242
Retailers offering free recycling	3

Table III-2 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MWh saved. One major change during PY2 was Navigant's determination that 10% of CFL bulbs sold were being used in commercial applications with longer daily hours of use than residential assumptions. This attributed to larger Ex Post savings versus ComEd's Ex Ante estimates[6]. A discussion of ComEd's differences with the evaluation approach for PY2 can be found in Section IX.

Table III-2

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
Residential ENERGY STAR Lighting	127,011	145,650	202,557	159%

Key Accomplishments

- **Implementing a multi-channel campaign to reach business customers, residential customers and employees, ComEd collected the second-highest amount of pledges for greenhouse gas emissions reductions (214,804,565 lbs) among all the utilities participating in the "Change the World Start with ENERGY STAR" national campaign.**
- **The program was able to ramp up to exceed an increased target of approximately 7.8 million CFLs from an initial target of 4.2 million CFLs**
- **Decreased package sizes of bulbs at some larger warehouse stores. Most bulbs were sold in packages of four or less.**

[6] Ex Ante estimates are based on tracking of installed measures multiplied by ComEd's planning estimates for realization rates and NTG ratios. Ex Post values are verified measures installed multiplied by the evaluator's determination of realization rates and NTG ratios for that program.

Key Challenges in Plan Year 2

ComEd was able to increase retailer participation, although one large DIY retailer was removed from the program due to corporate stances on in-store displays. Striving for consistency between retailers is important to maintain a level playing field.

While the diversity of retailers has helped to reach broader segments of customers, the growing number of participating retailer and manufacturers has made receiving timely sales data a challenge to monitoring the program.

Some retailers still could not handle the manufacturer markdown within their stores, so point of purchase coupons were used to ensure these retailers could participate in the program.

Education and Awareness

ComEd implemented the following integrated communications tactics:

- Improved in-store retail point-of-sale material — brochures, price stickers, beam signs, banner stands, recycling signs/stickers, sales staff talking points and tip cards.
- Produced customer bill inserts and articles in ComEd's *Energy@Home* customer newsletters to highlight and promote components of the initiative, including the benefits of CFLs, the existence of the ENERGY STAR Pledge and the availability of recycling drop-off points for used CFLs.
- Conducted in-store retail demonstrations at participating retail locations hosted by *Smart Ideas* field representatives featuring ENERGY STAR literature, CFL recycling information, light bar demonstrations and energy use meters.
- Collected ENERGY STAR pledges — through which consumers pledged to take actions to reduce energy consumption in their homes — during in-store lighting demonstrations, community events and through in-store instant coupons at participating retailers.

Key Activities for Plan Year 3

The PY3 sales target is 10.78 million bulbs and 90,000 fixtures — a total increase of more than 38 percent from PY2 targets. Several program enhancements were adopted to manage this more aggressive goal, including:

- Increasing the number of ENERGY STAR lighting products eligible for discount
- Adding significantly more ENERGY STAR lighting fixture products eligible for discount
- Tailoring retailers' in-store point-of-purchase materials to increase shopper awareness of the products while adhering to retailer's marketing requirements
- Increasing the number and frequency of in-store retail demonstrations
- Getting product displays and shelf inventories placed in more visible areas

Appliance Recycling

Program Description

The Appliance Recycling incentive promotes the retirement of inefficient second refrigerators and freezers, as well as room air conditioners, by offering ComEd residential customers a $25 bounty and free pickup. JACO Environmental, who administers the program, recycles the units in their Illinois-based facility to ensure that CFCs and foam insulation in the old appliances are handled in accordance with the Environmental Protection Agency's *Responsible Appliance Disposal (RAD) Program.*

Customers can receive $25 payments for up to two qualifying refrigerator and/or freezer units. The units must be between 10 and 30 cubic feet in size, empty and operational at the time of pickup. The unit also must be accessible with a clear path for removal. Customers having a refrigerator or freezer recycled can also turn in a room air conditioner for recycling and a rebate.

Plan Year 2 Activity

The Appliance Recycling program surpassed its second-year MWh goal by more than 38 percent, while remaining within 9 percent of its planned budget. Table III-3 details key measures of program performance.

Table II-3
Program Metrics

Program Statistics	Quantity
Refrigerators recycled	20,065
Freezers recycled	4,946
Room air conditioners recycled	724
Total appliances recycled	**25,735**
Number of Enrollments	34,618
Number of JACO employees	16
Number of JACO trucks	5
Estimated tonnes of CO2e destroyed	18,397
Harvest Rate	74%[7]

Table III-4 shows the actual MWH saved compared to the initiative's plan:

Table II-4

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
Appliance Recycling	23,628	25,997	32,624	138%

Key Accomplishments

- **The program exceeded its MWh goal of 23,628 MWh by 38 percent**
- **Units recycled through this program increased by 113% from PY1. This large increase was accomplished through intense marketing efforts, including radio and newspaper ads, regular bill inserts, and targeted direct mail campaigns**
- **A program change to collect old, working fridges and freezers at the point-of-sale, successfully tested with Abt Appliance, was expended to include other large retailers. MOUs are underway and implementation scheduled for PY3**

Key Challenges in Plan Year 2

In mid-year, the program's savings goal was revised from 18,357 to 23,628 MWh. The program encountered a number of challenges over the course of the year that required changes in implementation strategy. The program provided ample opportunity to test consumer based

[7] Harvest rate is calculated as the ratio of units actually collected and recycled to the number of customer requests for a unit pick-up. Units are not picked-up for a multitude of reasons – customer not home, unit does not work, unit too small, unit cannot be safely removed from premise, etc.

Marketing and Communication strategies. The robust tracking of performance data helped measure the impact of such strategies.

Initially, marketing the program through "proven" communications channels such as bill inserts and newspaper advertisements did not generate the anticipated response. To get back on track, marketing communications were temporarily and significantly increased, causing an increase in the cost of acquisition for units picked-up.

The harvest rate for participants remained consistently around 74 percent, slightly better than industry norms, but significant nonetheless in terms of missed unit volume and energy savings. The harvest rate could be improved if we allowed customers to leave the appliances outside for pickup. However for safety concerns, we do not pursue this tactic.

Education and Awareness

ComEd implemented an integrated communications strategy that included the following tactics:

- Presenting Appliance Recycling information in ComEd customer bill inserts, ComEd's *Energy@Home* customer newsletter, and in ads placed in four area newspapers
- Wrapping JACO's collection trucks in Appliance Recycling program messaging, in effect, create giant, moving billboards for the program
- Utilizing direct mail and sophisticated demographic software to target customer segments that research indicated were best candidates.[8]

The Appliance Recycling Program was advertised in the following newspapers:

- **Aurora Beacon News**
- **Chicago Tribune**
- **Joliet Press**
- **Pioneer Press (Western Suburbs)**

Key Activities for Plan Year 3

The goal for PY3 is to achieve 32,396 MWh in savings which equates to a 37 percent increase over PY2's goal. To meet this challenge, a number of new marketing tactics are being examined. They include:

[8] ComEd uses the Claritas' PRIZM database that contains demographic and behavioral data on over 890,000 households nationwide. This database allows ComEd to match current program participants with zip codes that contain similar type customers to allow for targeted marketing of the program.

- Evaluating impacts from increasing incentives and resulting changes in participation rates
- Conducting market research on customer perceptions and why they may not use this program for discarding old appliances
- Increased marketing activity to target likely participants
- Expansion of retail partners to include Sears and Best Buy

All-Electric Efficiency Upgrade

Program Description

Smart Ideas' All-Electric Efficiency Upgrade, originally known as the Multi-Family All-Electric Sweep, offered multi-family all-electric building residents free, direct installation of low-cost energy efficient products.[9]

Through ComEd's implementation contractor, Honeywell Utility Solutions, property owners and managers are also offered an analysis of their buildings' common areas. Results of the analysis are used to identify energy efficiency measures that may qualify for additional incentives through ComEd's *Smart Ideas for Your Business*[sm] program.

Low-cost, energy efficient products installed as part of the All-Electric Efficiency Upgrade:

- **CFLs**
- **Low-flow faucet aerators**
- **Low-flow showerheads**

Plan Year 2 Activity

Table III-5 summarizes the initiative's activities in terms of surveys and direct installs:

[9] This initiative does not focus on low-income housing, which is covered by the Illinois Department of Commerce and Economic Opportunity.

Table II-5
Program Metrics

Program Statistics	Quantity
Number of participating buildings	68
Number of units surveyed	4,669
Number of units upgraded	3,977
Completion rate	85%
CFLs installed	21,656
Faucet aerators installed	7,122
Showerheads installed	3,416

Table III-6 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MWh saved. ComEd disagrees with portions of the PY2 evaluation for this program, which resulted in an additional 475 MWh reduction in savings. ComEd feels other portions of the differences between its Ex Ante estimates and Ex Post savings are reasonable. A discussion is provided in Section IX.

Table II-6

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
All-Electric Efficiency Upgrade	1,782	2,735	1,840	103%

Key Accomplishments

- Used in-house customer data to identify apartment and condo management offices from a list of 175,000 customer accounts
- Effectively leveraged marketing communications and relationships that had been built by ComEd's External Affairs Managers to promote the incentive to this customer segment
- Educated landlords, owners and property management personnel regarding energy efficiency measures' money saving potential
- Conducted common area audit at each building, identifying potential energy efficiency measures from the *Smart Ideas for your Business* program
- Upgraded more than 4,100 units with energy efficient measures, including more than 19,400 CFLs, and left behind educational material to promote behavioral change and participation in other *Smart Ideas* offerings
- Additional buildings were scheduled through involvement with the Community Energy Challenge Pilot

Key Challenges in Plan Year 2

Initially, participation rates among eligible units within a building were lower than desired. After reviewing the initiative's delivery processes and value proposition, ComEd and Honeywell identified several barriers:

- Condo units were found to employ more light dimmers and lighting fixtures that could not accept standard twist CFLs and were more likely to have high-end plumbing fixtures that owners did not want retrofitted with low-flow aerators. As a result, eligible condominium owners were less likely to accept the direct install measures than was the rental community. Also Condo owners had to individually sign up for the program and be present during the technician's visit. ComEd continues to serve the condominium markets, but Honeywell now presents the program to the Association and tenants and requires sufficient tenant sign-ups to schedule the building for upgrade measures.
- The incentive originally required that the participating tenant to be home during the technician's visit. Despite the fact that evening and Saturday appointments were offered, the take rate was lower than projected. Beginning in PY1, Honeywell worked with building managers and maintenance staff to access all apartments, regardless if tenants were home. This tactic was used throughout PY2 by developing stronger working relations with the building managers.
- ComEd realized that the majority of the energy savings achieved was not related to measures designed to increase the efficiency of electric space heating, but was instead heavily tied to water heating – the savings being derived from the installation of faucet and showerhead aerators. In response, the initiative expanded to include multi-family buildings with gas space heating as long as electricity was used for domestic water heating.

Education and Awareness

This initiative is applicable to fewer than five percent of ComEd's residential customer base, so a mass-marketing approach was not appropriate. Instead property managers and owners of eligible buildings were mailed a personalized letter describing the offer and its benefits. The mailing was followed by a phone call from Honeywell personnel who were trained to provide further

information. Property managers and owners who took advantage of the offer were provided with signage to alert building tenants of the time and dates that the direct installs would be performed.

As the plan year unfolded, ComEd increased participation rates within each building by working closely with building management and landlords, whose active involvement and support of the incentive was crucial in recruiting participants.

Key Activities for Plan Year 3

The initiative's management and marketing approach, implemented during PY2, will remain relatively unchanged for PY3. One approach that was deemed successful was when one management company with seven buildings dedicated one building superintendent to supervise the direct install activity across all buildings. ComEd plans to use this approach in PY3 when possible. This should enable close to 100 percent penetration of units within a development.

In PY3, joint programs with the Illinois gas companies will begin. Eventually this all-electric program will be replaced with these joint programs, with savings from water measures only going to ComEd in residences with electric hot water heaters.

Single Family Home Performance

Program Description

Smart Ideas' Single Family Home Performance, originally called Single Family All-Electric Home Performance Tune-up, offered single family all-electric homeowners free, direct installation of low-cost energy efficient products and a walk through survey with the customer with a small co-pay ($25).[10]

Low-cost, energy efficient products installed as part of the Single Family Home Performance:

- **CFLs**
- **Low-flow faucet aerators**
- **Low-flow showerheads**
- **Hot Water pipe insulation**

[10] This initiative does not focus on low-income housing, which is covered by the Illinois Department of Commerce and Economic Opportunity.

Through ComEd's implementation contractor, Honeywell Utility Solutions, property owners are provided free, installed energy efficiency measures and an audit is performed to identify other savings opportunities. Informational materials are left behind describing other ComEd's *Smart Ideas for Your Home*[sm] programs. The homeowner pays a $25 co-pay for this program to partially offset the audit cost and assure more customer engagement and reduce cancellations.

In PY2, this program also conducted an air-sealing pilot with 92 homes. The pilot program utilized a blower door and sealed air leaks, typically in the attic. This pilot charged $125 to the consumer, but was not found to be cost effective to expand beyond the original pilot offering.

Plan Year 2 Activity

Table III-7 summarizes the initiative's activities in terms of surveys and direct installs:

Table II-7
Program Metrics

Program Statistics	Quantity
Number of participating homes	760
Homes receiving CFLs	709
Homes receiving showerheads	622
Homes receiving kitchen aerators	472
Homes receiving faucet aerators	681
Homes receiving pipe insulation	622
Homes receiving DHW turndown	75
CFLs installed	6,126

Table III-8 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MWh saved.

Table II-8

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
Single family Home Performance	399	514	638	160%

Key Accomplishments

- Used in-house customer data to target all-electric homes
- Upgraded 760 homes with energy efficient measures, including more than 6,100 CFLs, and left behind educational material to promote behavioral change and participation in other *Smart Ideas* offerings
- Energy audits spurred customers to undertake additional energy efficiency measures. Including water heater temperature setbacks, an additional 114 MWh was attributed to the program , 19% of savings achieved through direct install measures,

Key Challenges in Plan Year 2

The key challenge for this program was achieving participation. There are only approximately 10,000 ComEd customers who qualify for this program. Multiple inducements were offered to eligible customers to sign up, including waiving the $25 co-pays and making follow-up phone calls to encourage participation. The program has very high customer satisfaction, but the limited customer base prevents mass marketing or effective word of mouth recommendations. The targeted customers were determined from ComEd's customer database by rate selection.

Education and Awareness

This initiative is applicable to fewer than one percent of ComEd's residential customer base, so a mass-marketing approach was not appropriate. Instead homeowners were mailed a personalized letter describing the offer and its benefits. The mailing was followed by a phone call from Honeywell personnel who were trained to provide further information.

Key Activities for Plan Year 3

The initiative's marketing approach, implemented during PY2, will remain relatively unchanged for PY3. A similar program is being developed jointly with the Illinois gas companies which will pilot in PY3. The joint programs will eventually replace this all-electric program.

Central Air Conditioning Efficiency Services (CACES)

Program Description

The Central Air Conditioning Efficiency Services (CACES) program is offered under the *Smart Ideas For Your Home* umbrella and includes both a Diagnostics and Tune-Up, and a Quality Installation Services element. The objective of the CACES program is to improve the operating performance of existing central A/C units and to promote the proper sizing and installation of new standard and high efficiency A/C units. Energy savings is achieved from each of these program elements. Independent participating contractors are required to use a Service Assistant (SA) tool that is manufactured by Field Diagnostic Services, Inc. Field technicians employed by these contractors are also required to attend a technical training session in order to learn about the functionality and proper use of the SA tool. The SA tool is a wireless device which provides the technician with equipment information, monitoring of the air conditioner's operating system to properly set tune-up parameters, and records before and after efficiency parameters.

The entire CACES program was launched during PY2, and ComEd selected Honeywell Utility Solutions to implement the program. Honeywell utilized local area heating and cooling equipment distributors as a major part of their contractor recruitment efforts. Contractors receive incentives for each qualifying tune-up and new installation performed. Qualification standards for tune-ups and installations include the satisfaction of an air conditioning (A/C) system efficiency threshold as measured by the SA tool. All field test data captured by the SA tool is uploaded by contractors for review by Honeywell and ComEd. Honeywell also performs Quality Control field audits on a percentage of the contractor services submitted for incentive payment. These audits are performed using the SA tool to ensure consistency in the method of measured results.

Plan Year 2 Activity

The CACES program was launched during PY2 and did not meet its first year goals. In the original plan, the participation goals included 6,500 tune-ups and 17,460 installations. The expected resulting energy savings were 1,802 MWh and 7,227 MWh, respectively. The total program energy savings goal was revised to 4,232 MWh at mid-year when preliminary evaluation results reduced the ex ante individual measured savings. It also became apparent that customers were installing far fewer new central air conditioning systems than originally anticipated, believed

to be in part due to the weakened economic conditions. Tune-ups were the primary activity during PY2, and the independent evaluator estimated a much lower realization rate than expected for tune-up measures, largely due to higher pre-service operating efficiencies for air conditioners than assumed in the standard program measure savings.

Despite these factors, the CACES program was innovative in serving the residential A/C services market and engaged an impressive number of independent participating contractors, both small and large.

Table III-9 shows several significant statistics for the first year of the program:

Table III-9
Program Metrics

Program Statistics	Quantity
Tune-ups performed	16,293
QIV installations	594
QIV installations w/ SEER 14+	277
Participating contractors	129
Service Assistant tools	260
Incentives paid	$1,581,450

Table III-10 shows the actual MWh saved compared to the program's plan:

Table II-10

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. Of Goal
CACES	4,232	1,457	1,964	46%

Key Accomplishments

- **Introducing advanced diagnosis techniques and testing of A/C operating performance with the Service Assistant tool.**
- **Enlisting 129 independent participating contractors and placing 260 Service Assistant tools into the field.**

Key Challenges in Plan Year 2

The CACES program faced several challenges during its first year. Some of these challenges were internal to the program management and implementation while other challenges were external. The challenges faced by CACES included:

1. An on-going, prolonged period of weakened economic conditions not experienced in several decades, constrained customer spending on both equipment maintenance and equipment replacement
2. Weather conditions during the summer of 2009 were some of the coolest on record, making it very challenging for contractors to sell both their tune-up services and new equipment installations
3. The SA tool data upload process and the paperless incentive application process both require a level of computer proficiency to perform efficiently. The learning curve for these required skills was fairly steep for some contractors and led to an overall level frustration with the program
4. Smaller one and two-man HVAC service companies with no dedicated back-office staff are less inclined to incorporate the use of the SA tool into their daily operations. For these contractors, time spent in the office completing incentive applications comes at the expense of having a reduced presence in the field and/or prolonged after-hours administrative time
5. When contractors cannot afford or choose not to equip their entire field staff with SA tools, they typically tend to outfit their service technicians before their installers. This drives an extremely high volume of qualifying tune-ups as compared to new installation work
6. Preliminary evaluation results for tune-up savings were significantly lower than those expected in the original plan

While some aspects of these challenges were beyond our control and influence, other revelations afforded us with an opportunity to revisit certain aspects of the program's design and implementation. One result is that we will be revamping our efforts with regards to outreach to the contractors who participate in the program. This will allow us to both better understand and

support their specific business needs for incorporating the requirements of the CACES program into their daily operations. We will also take a close look at different ways to make our customers aware of the CACES program, promote the benefits of central AC efficiency to our customers, and influence our customers to proactively request the services offered. Even with the challenges faced by the CACES program, the PY2 evaluation found that contractors were satisfied with the overall program administration and found the training useful

Education and Awareness

ComEd implemented an integrated marketing communications strategy that included the following tactics:

- Integrating the CACES program into ComEd's *Smart Ideas For Your Home* portfolio of residential energy efficiency products and services.
- Presenting information about the Central Air Conditioning Efficiency Services program to customers through both bill inserts and ComEd's *energy@home* newsletter.
- Placing promotional print advertisements in three major area newspapers.
- Assisting independent participating contractors with their marketing efforts by providing visual identifiers for use in their advertising materials as well as on technician uniforms and service vehicles.
- Listing each independent participating contractor on the ComEd website in order for customers to locate service providers for their specific zip code area.

The CACES Program was advertised in the following newspapers:

- **Chicago Sun-Times**
- **Rockford Register Star**
- **Kankakee Daily Journal**

Key Activities for Plan Year 3

The key activities for PY3 will be to re-examine the program's implementation costs, energy savings targets, and anticipated participation levels. Further refinement of PY3 goals may be required upon understanding and applying the final PY2 evaluation results.

ComEd and Honeywell have been working closely to address challenges throughout PY2 and will continue providing concerted efforts in PY3. At the end of PY2, data flow issues were recognized

that required considerable improvements to the data transfer and verification between multiple IT systems. Improving this data flow should improve incentive processing timeframes as well as energy savings tracking.

Due to the design of the CACES program, the primary marketing emphasis in PY3 will be to drive customers to visit the ComEd website in order to locate independent participating contractors in their area and help to increase levels of customer participation and energy savings.

Central Air Conditioning Cycling

Program Description

The Central Air Conditioning Cycling initiative (*formerly known as Nature First*) is a longstanding demand response program available to residential homeowners with central air conditioners. More than 70,000 customers are currently participating.

Participants earn summer bill credits by allowing ComEd to cycle their central air conditioner's compressor off-and-on during periods of high electrical demand. This is accomplished through the installation of a paging-enabled switch installed on the air conditioner compressor that is activated using a paging network. During cycling, the air conditioner's fan stays on to circulate already cooled air and keep the home comfortable.

Customers can choose from two cycling options -

(1) ***50% option -*** *cycles the air conditioning unit off a maximum of 15 minutes every half hour, providing customers with a $5 bill credit each month from June to September.*

(2) ***The 100% option -*** *cycles the air conditioning unit off for up to one continuous three-hour period as needed; enrolled customers receive a $10 bill credit monthly from June to September.*

Plan Year 2 Activity

Table III-7 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MW saved.

Table III-7

Program Results	ComEd Planning Goal (MW)	ComEd Estimated *Ex Ante* Savings (MW)	Navigant Verified *Ex Post* Savings (MW)	Pct. of Goal
Central Air Conditioning Cycling	11.1	15.5	13.6	123%

Key Accomplishments

- Added 11,314 new eligible participants, however evaluators only recognized 9,418 as new net participants, however this still exceeded the plan goal by 22 percent
- Achieved 13.6 MW of demand response, exceeding the plan goal by 2.5 MW, or 23 percent

Key Challenges in Plan Year 2

Expansion of the Central Air Conditioning Cycling initiative faced several challenges, including service coverage issues when one of ComEd's paging vendors unexpectedly went out of business. Coverage was quickly restored without consequence through another vendor.

Internal resources were also stressed by the need to manage the work processes and planning of a growing field workforce that installed and maintained the program's paging-enabled switches.

Education and Awareness

Low-cost and no-cost tactics were used whenever possible to promote this incentive. These tactics included:

- Having Central Air Conditioning Cycling materials and knowledgeable *Smart Ideas* personnel in attendance at more than 30 events — including city/county fairs, Chicago museum events, environmental fairs and ComEd employee meetings — where program promotional material was distributed
- Publishing articles in ComEd's residential customer newsletter, *Energy@Home,* during the relevant summer months (July, September, October)
- Placing promotional messages on the outside of ComEd's bill envelopes (August, April, May)
- Placing promotional messages directly on customer bills (August, April)

- Issuing press releases several times throughout the year to promote the initiative and increase awareness

Additionally, because enrollment volume targets could not be achieved without additional marketing communications, a highly sophisticated direct mail campaign with matching materials was employed and proved effective in increasing program participation.

Specifically, ComEd developed a regression model that utilized customer usage data, demographics, lifestyle information, and local area census characteristics to predict a customer's propensity for enrolling in the initiative. This model was used to select prospects for the direct mail campaign and resulted in generating more than half of all new signups.

Key Activities for Plan Year 3

Lowering the cost of customer acquisition without jeopardizing enrollment targets will continue to drive ComEd's marketing efforts in PY3. SnapPaks (i.e. one page bill insert with perforated edges), Val Packs (i.e. promotional slip added to third party coupon mailing) and ComEd bill inserts will be used to help lower the cost to acquire customers in PY3. The cost effectiveness of acquiring customers using each of the promotional materials above will be evaluated.

Technological and process improvements are planned that will improve paging coverage. Paging improvements include adding additional paging towers to the system in order to improve paging coverage to direct load control switches in the field. Other process improvements include adding surge protection and GPS to the paging transmitters to improve reliability between the paging transmitters and the paging satellites.

III. Smart Ideas for Your Business℠

Smart Ideas for Your Business℠ is comprised of a diverse number of incentives and delivery channels to ensure relevance and reach among our different business customer segments. The portfolio achieved 216,528 MWh of net energy savings in PY2, corresponding to 137% of its goal.

The program implementation team combined the Commercial & Industrial (C&I) Prescriptive and C&I Custom initiatives into a single, cohesive offering to boost implementation – and marketing effectiveness in PY1. This combined initiative is referred to as "Prescriptive and Custom Incentives" within this report, although separate performance metrics continue to be provided individually for each initiative. The Retro-Commissioning Program element was launched as a full-time program at the beginning of PY2 from its pilot status in PY1, and expanded its covered measures throughout the year. Although some startup activities occurred in PY1, C&I New Construction went into full operation in PY2.

Prescriptive and Custom Incentives

Program Description

ComEd provided business customers with incentive offerings through the *Smart Ideas for Your Business*℠ program: Prescriptive and Custom. Prescriptive incentives provided the customer with a menu of energy efficient measures that have been given pre-calculated incentive rebates based on their known energy efficiency performance. These incentives were available for common replacement or retrofit projects such as lighting, HVAC (heating, ventilation and air conditioning), motors and commercial refrigeration technologies.

ComEd's Custom incentive offering targeted commercial and industrial projects that included manufacturing process improvements or complex measures for which deemed savings or simple

savings algorithms are not appropriate (or available). Custom incentive amounts were based on a formal engineering estimate of the energy savings anticipated for specific customer projects, including process improvements or new technologies not covered under the Prescriptive incentive offering. Each Custom incentive customer application and its energy savings estimate were evaluated on a case-by-case basis.

ComEd employs KEMA to assist in the administration of Prescriptive and Custom incentive offerings.

Plan Year 2 Activity

Program Satisfaction Metrics (Pct. Satisfied)

- *Overall Customer Satisfaction – 97%*
- *Satisfaction w/ Contractor - 97%*
- *Satisfaction w/Rebated Equipment – 97%*

The Prescriptive and Custom program incentive budgets were combined to better manage funding and marketing. Demand for the incentives was strong and the incentive budget was limited. As a result, lighting projects were placed on a waiting list for several weeks in PY2. Eventually all projects were funded or deferred to PY3.
Lighting and lighting-related projects proved to be the dominant technology category for both incentives.

The slowdown of activity at the end of PY1, in response to budget limitations and wait listing of projects, affected the continuation of project pipeline activity. A slow start for non-lighting projects in PY2, in combination with generally longer planning periods for Custom projects, likely limited Custom projects in PY2. ComEd has started developing a more consistent pipeline for projects which will continue into subsequent years,

Table IV-1 describes key program metrics, including the number of applications received and processed, incentives requested and paid, and a breakdown of types of projects.

Table IV - 1
Program Metrics

Program Statistics	Quantity
Number of applications received	2489
Number of applications completed	1930
Amount of Incentives Paid	$15.6M
Amount of Incentives Requested	$17.0M
Total Cost of Projects Supported	$80.9M
Pct. Prescriptive Projects *(by MWh)*	92%
Pct. Custom Projects *(by MWh)*	8%
Pct. Lighting Projects *(by MWh)*	86%
Pct. HVAC Projects *(by MWh)*	5%
Pct. Refrigeration Projects *(by MWh)*	1%
Pct. Other Projects *(by MWh)*	8%

Table IV-2 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MWh saved.

Table IV-2

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
Prescriptive and Custom Incentives	**152,100**	**168,229**	**209,151**	**138%**[11]

[11] The difference between the ex post and ex ante results are due to increased hours of usage found for many of the lighting projects and conservative engineering estimates for the non-lighting projects. Through use of data from phone surveys, engineering review and on-site visits, Navigant found many of the lighting measures hours of use needed to be increased relative to their default assumptions.

Key Accomplishments

- Incentives offered through this initiative proved popular with businesses across ComEd's service territory. A wait list for prospective lighting projects was developed in December, but all projects were either funded or deferred to PY3 before year end
- Incentives were provided for 1930 projects
- More than 320 product and service providers signed up to become trade allies and received training on the program's rules and regulations
- ComEd conducted three trade ally seminars in Spring 2009 to prepare for early applications for PY2 projects
- Conducted instructor-led training meetings and webinars for basic program training and covering special topics
- ComEd sponsored its first Energy Efficiency Expo at the Rosemont Convention Center
    - Trade allies set up 63 exhibition booths demonstrating energy efficiency equipment and services
    - Large attendance with 1,278 registered attendees
    - Surveys indicate a 98% customer satisfaction rate with Expo
- The $15.6M in incentives led to business investing over $80M in energy efficiency projects.
- There was continued strong participation (66% of projects) from smaller customers with electric demand less than 1 MW.
- At end of PY2, over 400 projects applied for PY3 pre-approvals

Key Challenges in Plan Year 2

Despite a very successful PY2, the *Smart Ideas for Your Business'* team faced several significant challenges.

Due to demand for incentives that exceeded the PY2 budget, ComEd needed to develop a strategy for wait-listing projects. This required an effective communication strategy. Prior to setting the wait list, ComEd established a funding dashboard on its website to display the availability of funds and keep customers informed. Customers with non-lighting project applications were not wait-listed to encourage their participation and provide continuity to their internal processes. All customers were eventually provided funding, or projects were deferred for completion in PY3, at the customers' request.

As discussed previously, after receiving surprising PY1 evaluation results, ComEd increased its internal MWh goals at mid-year. Total project targets for the Prescriptive/Custom program increased from 1,000 to 1,900 and gross MWh targets increased over 20%. ComEd had to focus on projects which could be completed in a shortened time frame to qualify as a PY2 project. The number of projects required in PY2 was higher compared to PY1, in part because customers would not commit to the larger, more comprehensive projects. This was likely due to the recessionary economy.

Perhaps the most challenging aspect continues to be the fact that given the statute's requirement that the programs operate on a single-year basis. This leads to focusing on projects with short completion timelines. This situation also presented a significant challenge to ComEd's own internal target of achieving a certain amount of MWh savings from Custom projects. In PY2, ComEd started to bridge this issue by starting early with establishing pre-approvals for PY3. This allows better continuity for all participants, and provides more completed projects distributed throughout the year.

Education and Awareness

Typically, programs targeted at medium-to-large C&I customers rely on trade allies to effectively bring the value proposition to market. Understanding this, ComEd spent considerable resources to recruit, assemble and strengthen a trade ally network in PY2. These efforts included:

- Conducting three trade ally seminars for business customers to launch the *Smart Ideas* program
- Expanded Web-based trade ally training program designed to educate trade allies on how to participate in the program, including information on how to apply for incentives on behalf of their customers
- Providing trade allies who completed the Web-based training or attendance at a trade ally seminar, the ability to be listed as a trade ally on the ComEd Web site
- Met one-on-one with our top trade allies

- Publishing of a bi-monthly trade ally e-newsletter (The Wire) that featured upcoming news, program enhancements and other items of interest to the trade ally community
- Publishing of a bi-monthly customer e-newsletter (*Smart Ideas for Your Business* e-newsletter) that featured information on energy efficiency technologies, program enhancements and other items of interest to customers
- Participating in numerous public speaking engagements at civic groups, trade associations and businesses to promote the program and energy efficiency
- Conducted ComEd's first Energy Efficiency Expo with 1,278 registered attendees and 63 Trade Ally exhibitors. Post Expo surveys indicated that 80% of attendees learned about projects they could implement, and there was an overall customer satisfaction of 98%. This occurred in late PY2 with benefits largely anticipated in PY3.
- Updating a *Smart Ideas* section on the ComEd.com Web site to more effectively and quickly disseminate information to customers and trade allies, as well as provide these audiences with tips and resources
- Developed a resource book for ComEd Account Managers with all available program resource information to facilitate their engagement in promoting energy efficiency to their customers
- Provided "Lunch 'N' Learn" sessions for ComEd Account Managers that cover a variety of technology-related topics. Trade allies are invited to provide the technology-specific presentations. Having the trade allies present provides a unique opportunity for ComEd Account Managers to connect with trade allies that could help their customers with energy efficiency projects.

Key Activities for Plan Year 3

ComEd will focus on strategies designed to boost non-lighting-related energy efficiency projects and the Custom incentive offering for PY3. Also, an increased effort will be made to strengthen the value proposition associated with the ComEd trade ally network. Specifics of these two aspirations include:

- Additional marketing and promotional outreach efforts are needed to boost project volumes. "Low hanging fruit" and ready-to-go type projects may have been largely exhausted in PY1 & PY2, and more aggressive marketing tactics for both trade allies and customers will be needed to meet PY3 volumes.
- Evaluate quality standards and programs to recognize and reward trade allies who provide the highest levels of customer service to our business customers
- Offering more training opportunities to allow trade allies to improve their skill sets and energy efficiency knowledge and take better advantage of Custom incentive opportunities
- Re-categorizing many specialty lighting technologies and other measures from Custom to Prescriptive to allow the Custom incentive offering to focus on industrial process improvements such as large motors and drive projects, compressed air systems and chilled water system efficiency improvements
- Adding technology measures with Prescriptive and Custom incentives to introduce customers to new measures that will become more prevalent

Commercial & Industrial Retro-Commissioning

Program Description

Retro-Commissioning provides building owners with low-cost adjustments to energy-using equipment to improve the efficiency of the building's operating system with a focus on building controls and HVAC systems.

ComEd expanded its pilot retro-commissioning initiative into a fully launched program in PY2. Retro-commissioning completed 13 projects in PY2 for a total net savings of 6,574 MWh. This compares to the PY1 pilot results of 4 projects and 1,090 MWh. This program was designed to improve the efficiency of the buildings' energy systems with low and no cost operational measures. ComEd contracted with Nexant to implement this program. Retro-commissioning is achieved primarily through qualified engineering consulting firms, known as Retro-commissioning Service Providers (RSPs), who are selected through a competitive RFP process.

The program required that facilities had to be at least five years old, have a peak demand of at least 500 kW, contain at least 150,000 square feet of conditioned floor space and possess a relatively high Energy Use Index (EUI) compared to the EUIs of similar buildings. Additionally, no major renovation or large capital investment for the facility could be pending.

Participants had to commit to spend at least $10,000 to implement identified retro-commissioning measures, measures that would provide an estimated total project simple payback of less than 1½ years, based upon electric energy savings. Operations and maintenance staff had to express a commitment for active involvement in the process as well. In PY2, ComEd has made some ad hoc adjustments to these requirements to increase customer project commitments for larger study requests. This mitigated ComEd's risk of paying for extensive engineering studies without capturing cost effective savings.

Plan Year 2 Activity

The program exceeded its PY2 goal of 5,780 MWh of energy savings with thirteen participants including: commercial office buildings, a museum, university campus buildings, a hotel, hospitals, a large retail store, and industrial customers.

Table IV-5 compares Navigant's ex post estimates of savings with ComEd's initial goal and its ex ante estimate of MWh saved.

Table III-3

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante* Savings (MWh)	Navigant Verified *Ex Post* Savings (MWh)	Pct. of Goal
Retro-commissioning	5,780	6,768	6,574	114%

Key Accomplishments

- M&V completed for 13 projects in PY2 and 32 projects were accepted for PY3
- Nexant identified and trained 11 Retrocommissioning Service Providers (RSP); 6 submitted projects for PY2
- Retro-commissioning for compressed air systems was added to measure offerings in PY2
- Development of case studies to enhance marketing efforts

Key Challenges in Plan Year 2

In addition to being the program administrator in PY1, Nexant also acted as the RSP for the first four pilot projects in PY1. In PY2, independent RSPs had to be integrated to grow the program, and adequate QA/QC processes had to be developed to assure uniformity among customer projects implemented by different RSPs. These QA/QC processes were evaluated by Navigant, which commended Nexant for its strong communication and feedback processes.

An RSP scoring system was developed and all active RSPs were evaluated at year end. Five of the six active RSPs passed the required metrics and proceeded as a PY3 qualified RSP. One active RSP did not meet the metrics, and while allowed to remain a qualified RSP for PY3, will need to re-apply for consideration as a PY4 RSP.

The primary challenge to the Retro-commissioning program in PY2 was adherence to timelines. Typically, retro-commissioning programs operate over a 9-18 month timeframe to accommodate the analysis, customer approvals, implementation, and measurement and verification requirements. Only a few projects could be completed within the 12 month program year. ComEd had to establish earlier application review and define projects based on expected completion dates.

Education and Awareness

Similar to the strategy deployed in the Prescriptive and Custom incentives, customer education and awareness of retro-commissioning is achieved primarily through the RSPs. In PY2, RSPs accounted for 74% of documented referrals, while 26% were from ComEd or Nexant program

staff. Case studies were developed to assist RSPs and customers to understand possibilities and other customers' experiences with retro-commissioning projects.

ComEd continued to provide retro-commissioning training for ComEd Account Managers. Account managers were updated with new program materials and screening criteria that helped them determine which of their customers might be ideal participants.

Key Activities for Program Year 3

Additional measures are being developed for PY3 and compressed air system services are being expanded. Like all retro-commissioning projects, the new measures focus on the operation and optimization of existing systems without major equipment replacements.

ComEd and Nexant will address managing uniformity and consistency across RSPs. Calculation templates will be provided to RSPs to simplify their review and improve overall service to customers. RSP performance will continue to be measured and evaluated.

Commercial & Industrial New Construction

Program Description

ComEd implemented its *Smart Ideas for Your Business* Commercial New Construction program in Program Year 2 (PY2). The program is designed to capture immediate and long-term energy efficiency opportunities available during the design and construction of new buildings, substantial additions and major renovations in the non-residential market. ComEd contracted with Energy Center of Wisconsin (ECW) for turn-key program design and implementation.

C&I New Construction Program offers:

- ***Building analysis***
- ***Design Assistance***
- ***Technical Education and training***
- ***Financial Assistance***

Available Program "Tracks":

- ***Comprehensive – integrated building design***
- ***Systems – when limited integration is available***
- ***Small Business – improved lighting and daylighting***

The program uses a building sciences approach to expand marketplace knowledge and foster the design and construction of high performance commercial buildings that provide superior energy efficiency, integrated systems performance, comfort and highly productive indoor environments. The program provides an assembly of new construction design assistance; building performance

and life cycle analysis; technical education and training; and financial incentives to building designers, architects, engineers and owners to surpass the 2009 IECC standard for new construction practices by at least 10 percent.

In order to meet the needs of projects of various size, complexity and stage in the design cycle, the program initially offered two project tracks. A 'comprehensive track' offers the highest level of project assistance and financial incentives to address construction design and management, resulting in a holistic, integrated and efficient building design. This involves very early participation in building design and the use of whole-building energy simulation and analysis. The 'systems track' is intended for less complex projects, or those with limited opportunities for integrated design, or those in the later stages of the design process. It allows for less involvement by implementer and garners energy savings from modifying lighting and HVAC systems. During the course of the year, a third track for the commercial new construction of small buildings was added to offer assistance and incentives for improved lighting and daylighting features.

Plan Year 2 Activity

The program exceeded its PY2 goal of 630 MWh of energy savings with verified savings of 803 MWh from sixteen participants, including: 11 retail stores, 5 grocery stores and 1 restaurant. In PY2 all savings were generated from the "systems track". In PY2, 40 applications were submitted, of which 28 were accepted, and 16 completed within the program year.

Table IV - 4
Program Metrics

Program Statistics	Quantity
Number of applications received	40
Number of applications approved	28
Number of applications completed	16
Amount of Incentives Paid	$87,396
Building area affected (Sq. ft. 1000's)	754

Navigant Consulting, Inc. provided evaluation, measurement and verification services for the program. Table IV-5 compares Navigant's ex post[12] estimates of savings with ComEd's goal and its ex ante[13] estimate of MWh saved.

[12] Ex post refers to the evaluation-adjusted net savings, after Navigant's evaluation, measurement and verification

Table IV - 5

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated *Ex Ante*[1] Savings (MWh)	Navigant Verified *Ex Post*[2] Savings (MWh)	Pct. of Goal
New Construction	630	1098	803	127%

Key Accomplishments

- 16 projects completed in PY2
- Lighting, HVAC, and Daylighting measures were implemented
- A good geographic distribution within the service territory
- A good range of project sizes – from 5,491 to 125,317 square feet
- 55 projects representing 8,345,323 square feet were accepted for PY3

Key Challenges in Plan Year 2

Since new construction projects typically take between 18-36 months to complete from design through construction, only a few projects were able to complete during the first year of the program. As a result, no comprehensive projects could be considered given the program requirement for early design involvement. The implementation team was able to develop relationships with the design community, encouraging them to submit longer term comprehensive projects which we expect to begin seeing in PY3.

The New Construction offering was launched during very unfavorable economic conditions. Specifically, a fragile financial sector, a lack of credit and financing, and an excess of available commercial space considerably reduced the demand for the design and construction of new buildings. Despite the challenging economic times, participation was strong for a first year program.

[13] Ex ante refers to the estimated net impacts tracked in ComEd's program tracking database and reported to Navigant, prior to Navigant's evaluation, measurement and verification.

A new code was adopted in January 2010, which changed the baseline for the program from IECC 2006 to 2009 during the middle of the first year. This change had no savings impact in PY2, but in anticipation of further upcoming code changes, program design may need revisions along with increasing incentives.

Additionally, we faced the challenge of raising the design community's awareness of the program and its services during its first year. Previously, no offering had been designed to address this market consisting of developers, owners, architects, engineers, and contractors. During PY2, the implementation team worked to raise awareness with training and education specifically targeted at the design community.

Education and Awareness

Customer education and awareness of New Construction was achieved primarily through implementer ECW who conducted multiple seminars and training sessions. Some of the major training seminars were:

1. Lighting and Daylighting with Efficiency – June 17, 2009; 118 attendees
2. Building Systems – September 23, 2009; 77 attendees
3. Energy Efficient Lighting – November 3, 2009; 75 attendees
4. Optimizing HVAC Design – February 10, 2010; 67 attendees
5. Integrated Design Training – April 14, 2010; 58 attendees

Key Activities for Program Year 3

- Work to identify projects earlier in the design process to be able to affect greater efficiency gains.
- Maintain a multi-year program focus in order to engage new construction projects that take longer than a single program year to complete. Projects are included for savings results in the year of completion and incentives are paid upon verification.
- Incentive amounts will be examined. They are perceived by market participants as low compared to other programs across the country.

Small Commercial and Industrial CFL Intro Kit

Program Description

The Small Commercial and Industrial (C&I) CFL Intro Kit initiative was designed to bring *Smart Ideas* energy efficiency incentives to a customer segment that may not otherwise take advantage of the Prescriptive or Custom incentives in PY1, i.e. small business owners (non-residential, private sector customers under 10 kW).

The program was designed to run only in PY1, but ComEd continued to monitor purchases at ComEd's on-line store that were initiated by the catalogs included in this program's mailing of CFL bulbs. Very minor purchasing activity has been associated with this program. One impact on PY2 comes from Navigant's finding in PY1 that only 32% of bulbs distributed were installed during PY1. Fifty percent of the uninstalled bulbs were assumed installed in PY2 for a total net contribution of 3,008 MWh. The remaining 50% will be credited as installations in PY3.

Energy Insights Online (EIO)

Program Description

Energy Insights Online (EIO) is a Web-based energy analysis service that acquires data gathered from a customer's recording meters on a monthly or daily basis, and converts the data into easy-to-understand graphs and reports that profile the customer's electricity use. This service, once offered as a for-fee subscription by ComEd, is now offered at no charge through the *Smart Ideas* program to commercial and industrial customers.

Energy Insights Online provides customers with data to help them understand how and when their buildings use electricity.

Participating customers use EIO to develop strategies that can lower demand charges, quantify energy usage changes from production modifications, and even validate efficiency upgrades.

Plan Year 2 Activity

Table IV-6 provides a summary of the number of customers enrolled in Energy Insights Online.

Table IV-5
Program Metrics

Program Statistics	Total
New Enrollments	1,229
Total Enrollments (PY1-PY2)	2,915
Increase of Enrollments	59%

** Note – Prior to June 1, 2008, there were 400 existing EIO subscribers.*

Key Accomplishments

- Grew subscriber base by 59%, over 700% since free offering
- Conducted customer training webinars on use of tool
- Provided specialized on-site training based on customer requests
- Increased program awareness through multiple marketing channels

Key Challenges in Plan Year 2

The biggest challenge in introducing EIO to a larger audience was ensuring that interested customers had the necessary metering equipment. There are two versions of Energy Insights Online - monthly and daily. The daily version is only available for customers who have a meter that will accept daily readings.

Equipment availability was limited and posed a challenge in providing the timely exchange of daily meters and data. In addition, the limited amount of available meters was previously reserved for other company projects.

Education and Awareness

ComEd's marketing strategy in part was to "ride the carbon footprint's coattails" and position EIO as a necessary tool for organizations wishing to quantify their energy usage or carbon output. The service was also promoted as a "if you can't measure it, you can't improve it" companion tool for customers considering energy efficiency upgrades via the *Smart Ideas* program.

Most marketing was conducted either through in-person or Web-based presentations and demonstrations to business customers and business groups by the EIO administrator, or through ComEd's business customer communications channels (i.e., *Energy@Work* newsletter, ComEd Non-Residential Customer Bill buckslip advertisement, *Smart Ideas for Your Business e-Newsletter*, *Energy Essentials* e-newsletter).

In addition ComEd promoted the availability and the benefits of Energy Insights Online through the following channels:

- Presentation at the BOMA/Chicago organization meeting, Clean Air Counts Energy Forum, State EPA Networking meeting and K-12 Green Schools Symposium
- Presentations to ComEd Account Managers
- Presentations to business customers at Energy Efficiency Expo

Key Activities for Plan Year 3

The program will continue to use a variety of marketing communications channels in PY3 as ComEd continues to promote the adoption of the service. Tactics will include:

- Placing messages on non-residential customer bills (August, March and April)
- Authoring *Energy@Work* articles for our non-residential customer newsletter (June, November, January, March and May)
- Including subscription information in ComEd's *Smart Ideas for Your Business* and *Energy Essentials* business customer e-newsletters (May and November)
- Development of customer case studies on use of tool
- Conduct specialized customer on-site training sessions as requested
- Offering training webinars for customers and business organizations (August, November, February and May)
- Presenting program information at Chicago Building Owners and Management Association (BOMA) events, Clean Air Counts Energy Forum, and the Chicago Energy Management seminar.

Energy Usage Data System

Program Description

The Energy Usage Data System provides customers with an automated tool to obtain aggregated, whole building energy usage on a monthly basis. This allows owners of multi-tenant buildings to aggregate consumption within the building across all tenants. Prior to PY1, obtaining whole building energy data was a fee-based, manual process which took 10-12 days to complete. Customers now obtain this data in 1-2 days, free-of-charge.

The Energy Usage Data can be used by customers as part of the ENERGY STAR benchmarking process in conjunction with the U.S. Environmental Protection Agency's Portfolio Manager. A building scoring 75 or higher qualifies for ENERGY STAR certification.

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ComEd is one of the few utilities to automate this data retrieval process which empowers customers to benchmark their facilities using ENERGY STAR's Portfolio Manager.

Plan Year 2 Activity

Table IV-7 summarizes the number of new enrollments in Energy Usage Data following automation:

Table IV-6

Program Statistic	Total
New Building Enrollments	981
Total Building Enrollments (PY1 & PY2)	1344

** Note – Prior to June 1, 2008, 70 buildings received data via a manual process. The increase in enrollments compared to the manual process is 1820 percent.*

ComEd instituted several program enhancements including the implementation of software that provides automated, recurring, building energy usage data transfers directly into ENERGY STAR's Portfolio Manager (July).

Key Accomplishments

- Automation of customer energy usage data transfers directly into ENERGY STAR's Portfolio Manager
- Received *Outstanding Achievement in Energy Program Design* award from Association of Energy Services Professionals (AESP)
- Partnered with U.S. Environmental Protection Agency (EPA) to provide specialized on-site training workshops based on customer requests
- Provided training and support to ComEd account managers and customers to better understand the product and its application to energy efficiency initiatives

Key Challenges in Plan Year 2

Challenges were both resource and time constrained on the development and implementation of the Energy Usage Data System (version 2.0) enhancement. This was due to additional software modification requirements from the U.S. Environmental Protection Agency. Additional challenges surfaced around developing appropriate training materials and conducting efficient outreach to key audiences on program enhancements.

Education and Awareness

ComEd promoted the availability and the benefits of the automated Energy Usage Data tool through the following channels:

- Presentation at the BOMA/Chicago organization meeting, Clean Air Counts Energy Forum, State EPA Networking meeting and K-12 Green Schools Symposium
- Presentations to ComEd Account Managers
- Presentations to business customers at Energy Efficiency Expo
- Promotions to business customers in bill inserts and in ComEd's *Energy@Work* newsletter
- Training webinars for customers

Key Activities for Plan Year 3

ComEd will implement more robust tracking with additional cross-referencing between its databases to gauge enrollment in other Smart Ideas programs and continued use of the automated benchmarking services.

Similar to PY1 & 2, ComEd intends to continue to use proven channels to create awareness of the offering and drive enrollments. These channels will include:

- Authoring articles in the *Energy@Work* non-residential customer newsletter (August and February)
- Creating non-residential customer Bill insert advertisements (May and June)
- Conducting Energy Usage Data Webinars (July, August, September, October, November, December, March and May)
- Presenting at business organizations and trade groups such as BOMA, the Chicago Energy Management seminar, Energy Star Portfolio Manager Workshops and Clean Air Counts Energy Forum.

In addition, Energy Data Services will work on creation of customer Case Studies for use in promoting program and explaining correlation between facility benchmarking and potential energy savings.

IV. R&D / Emerging Technologies

ComEd is allowed to spend up to 3 percent of its portfolio budget on R&D / emerging technologies. For PY2, ComEd allocated $1.1 million for these initiatives and spent just over $1.0 million.

The primary activities for PY2 were the testing of two program concepts – the Home Energy Report and the ComEd Community Energy Challenge. Both of these activities are detailed in sections which follow. Three other smaller R&D activities for PY2 were a Best Buy TV pilot, a single family air sealing pilot, and initial development of a small C&I direct install program. Both the Best Buy TV and air sealing pilots were started and completed during PY2. The small C&I direct install program had initial development in PY2 with an actual pilot program to be run in select geographical areas during PY3.

The Best Buy TV pilot provided incentives to sales staff to promote more efficient CEE Tier 3 & 4 TVs. This pilot was conducted in 14 Best Buy Chicago stores from October 2009 to January 2010. The pilot included additional training for the Best Buy sales force and Point-Of-Purchase (POP) signs to identify “high energy-efficient” TVs to consumers. The pilot’s results were inconclusive, in part due to continual improvements in TV efficiency, which made it difficult to establish an efficiency baseline for evaluating savings. There are no current plans to expand this pilot.

The air sealing pilot was partially discussed in the Single Family Home Performance section. Customers eligible for the Single Family Home Performance program were offered this pilot as an add-on to the regular program. For a $125 co-pay, these customers received a blower door-

assisted air sealing of their home through a professional weatherization contractor. Before and after blower door tests were conducted, along with 3 hours of air sealing services to close infiltration gaps for immediate impact to heating bills. Based on the incremental costs and the measured kWh savings, ComEd determined that the pilot was not cost effective for the Single Family Home Performance program, and is not pursuing air sealing beyond this completed pilot.

Home Energy Report Pilot

Program Description

The Home Energy Report pilot is designed to evaluate the impact that energy usage information can have on a customer's energy usage behavior. This pilot involves 50,000 residential customers who receive regular reports in the mail regarding their electricity usage and how it compares to similar households. ComEd hired OPower (formerly Positive Energy) to administer this pilot program.

The key behavior component that the report emphasizes is the comparison of the customer's energy usage to an "average neighbor" and "most efficient neighbor". In addition, the report contains a 12-month usage comparison to neighbors, a comparison of the customer's prior year's usage to current usage and customized energy tips that the customer can implement to save energy.

The individualized reports are tailored to the customer.

The "neighbor group" is composed of customers with similar demographics (e.g., house square footage, type of heating) to ensure a "like for "like" comparison.

The energy tips listed for the customer are tailored to the individual customer and are also used to promote ComEd's residential energy efficiency initiatives.

The energy usage or savings of the 50,000 customers in this pilot will be compared to a similarly sized control group over a two year period to determine whether or not this type of program is a cost-effective source of energy savings.

Plan Year 2 Activity

With the pilot program not launching until PY2, the activities had to do with the set-up of the program. ComEd and OPOWER worked to identify the test and control groups of customers for the pilot. In addition, the Home Energy Reports were tailored to ComEd customers, including the ability to promote other residential energy efficiency tips and ComEd *Smart Ideas* program on these reports. ComEd and OPOWER worked through the many data issues associated with a data intensive program of this nature, setting up the necessary weekly feeds of information that are required to produce the home energy reports.

Key Accomplishments (after 6 months)

- Energy Savings approached nearly 2%
- Opt out rate was among the lowest when compared to other participating utilities
- Customers that were receiving monthly reports showed higher energy savings than those that had been receiving the report bi-monthly
- Overall customer response was positive, with over 86% of calls either positive or neutral

ComEd requested, after receiving early results from the implementer, that Navigant Consutling, an independent evaluator who has previously evaluated OPOWER programs for other utilities, conduct a preliminary evaluation of this pilot program seven months after implementation. A pre and post billing analysis was performed by the evaluator. Key findings indicated that energy savings for participants were estimated to range from .98% to 1.4% on average. The results were

also consistent with the implementer's findings in that those participants who received the home energy report on a monthly basis achieved higher savings.

Key Challenges in Plan Year 2

The key challenge in plan year 2, the inaugural year of the pilot, was determining the root cause of receiving an increasing amount of returned mail from participating customers. ComEd and OPOWER worked to solve this issue by modifying how customer addresses were being captured in the weekly data transfer file to OPOWER. As a result, it seemed that the rate of returned mail slowed but remains an issue. ComEd also, tracked and responded to individual customer feedback on receiving home energy reports while attempting to determine the appropriate strategy for the growing concerns of returned mail and tracking customer feedback. ComEd is currently working to resolve these two issues before the full implementation of this program. ComEd's second plan, covering PY4 – PY6, proposes to implement this type of behavioral program as a regular program in PY4 with 200,000 customers

Education and Awareness

Marketing communications were limited to the development of a customer welcome brochure that pilot program participants received along with their first energy report.

Further information about the report, as well as the action steps and energy efficiency ideas contained within it, are available through a Web portal designed and maintained by OPower.

Key Activities for Plan Year 3

Plan year 3 will be the final year that this program will be administered as a pilot. A key activity for this year will be to continue its joint efforts with OPower to evaluate different Home Energy Report formats to determine which has the largest impact on customer energy savings. Additionally,

ComEd will continue to work to reduce returned mail from participating customers and develop an appropriate strategy for responding to customer feedback. ComEd will also be preparing to launch this as a program element in plan year 4.

OPOWER provided ComEd with a quarterly update which captured data through June 2010. Participants had achieved over 10,510 kWh in energy savings and over half of the customer calls remained positive. On average, overall energy usage per participant household was reduced by an estimated 1.49%. The opt-out rate also remained below .5%.

At the end of the pilot, the independent evaluator will conduct a full evaluation of the pilot to determine the home energy reports impact on energy savings and its cost effectiveness.

ComEd Community Energy Challenge

Program Description

The ComEd Community Energy Challenge (CEC) was a pilot program with four key objectives:

- To develop new channels for delivery of our energy efficiency programs in a cost effective manner;
- To link ComEd's energy efficiency programs to community-based sustainability efforts;
- To explore how community-based efforts could more effectively reach and recruit hard-to-reach populations;
- To test how well municipalities could effect market transformation within their communities.

The 10 communities participating in this pilot were: Aurora, Carol Stream, Elgin, Evanston, Highland Park, Hoffman Estates, Oak Park, Orland Park, Schaumburg and Wilmette.

ComEd invited 12 municipalities considered to be leaders in their approach towards energy efficiency to compete in the Challenge -- ten municipalities agreed to compete. Each municipality submitted an energy efficiency plan to ComEd proposing various education and outreach initiatives and specific energy reduction and market transformation initiatives. The competition period paralleled PY2. During this year, each municipality implemented its plan and at the end of the year, ComEd determined the energy savings each municipality achieved. The Village of Schaumburg was determined to be the winning community and was granted the $100,000 award for winning the Community Energy Challenge.

ComEd contracted with Shaw Environmental to administer this program.

Plan Year 2 Challenges and Activities

At the start of the Challenge competition period, some communities were slow to begin work on their energy projects. This slow start was due to a variety of reasons: the release of federal funds for municipal funds was delayed, which in turn impacted the start of municipal projects; one community needed city trustees' approval to begin projects; and staffing changes at some municipalities slowed or halted work on their energy efficiency initiatives. In addition, budget constraints posed challenges for participants to attain their original energy plan goals. Where needed, ComEd provided ad hoc support to participants, whether fielding questions about our energy efficiency programs, providing technical support, or relaying program specific tracking data.

During the competition period, municipalities were required to submit quarterly tracking reports to ComEd. These reports identified participants' project status and provided documentation of the municipality's efforts. At the end of the competition period, the CEC panel[14] awarded points for actual performance, based on the tracking reports and on verification of projects by ComEd. ComEd calculated the participants' final scores based on the following criteria:

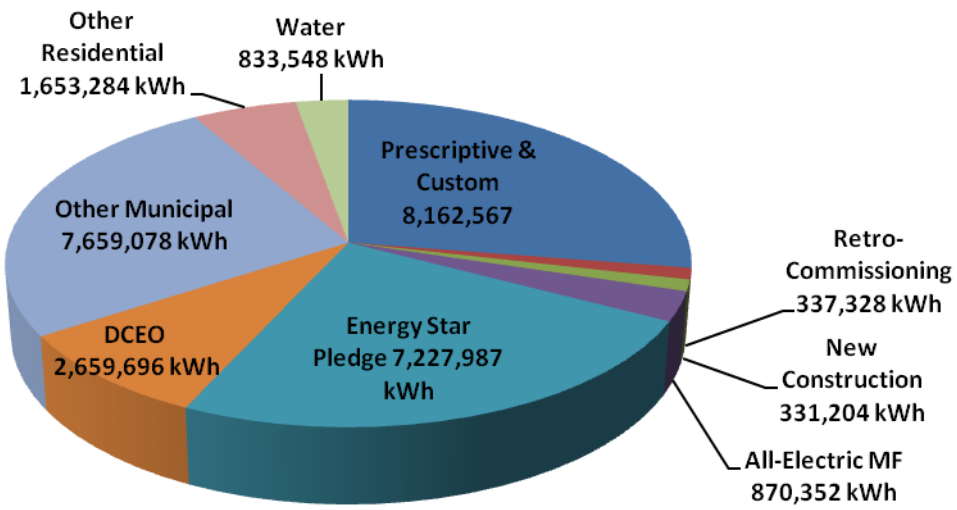
- 20% initial plan score
- 50% total realized energy savings
- 30% optional evaluation credits (e.g., water savings, greenhouse gas emissions reduction)

[14] The panel was comprised of the following organizations;

- Metropolitan Mayor's Caucus
- Illinois Clean Energy Community Foundation
- Midwest Energy Efficiency Alliance
- National Resources Defense Council
- Illinois Department of Commerce and Economic Opportunity
- Commonwealth Edison

Key Results Achieved [15]

Gross Energy Savings (kWh) Achieved by CEC Participants



Total: 29,735,044 kWh

The kWh savings identified within this program were not separately included in ComEd's PY2 savings achievements. Also, these savings were derived from program tracking data and information provided by the CEC participants and have not yet been verified by the independent evaluator.

Some preliminary findings from the independent evaluator include the following observations:

- Municipal participants were very satisfied with the CEC; many felt that learning their community's energy profile was one of the most valuable pieces of information that resulted from the CEC
- The CEC drew community leadership attention to the benefits of energy efficiency

[15] Energy savings and attribution to customers were estimated by Shaw Environmental

- There were mixed motivations for participation – some municipalities were motivated by the $100,000 prize; others were motivated by community sustainability plans and public recognition for EE initiatives
- Several participants were successful in reaching small businesses, a traditionally "hard-to-reach" population for ComEd
- The CEC increased participation in ComEd's *Smart Ideas for Your Business* (SIYB) and MF Efficiency Upgrade programs
- The CEC provided a mechanism to strengthen relationships with other local government sectors and key community constituents, e.g., local chambers of commerce, school/park districts
- Municipalities leveraged their existing communications channels
    - Many used their government newsletters to communicate CEC-related items to their residents
    - Three communities used their cable access programs
    - All communities used their municipal websites, with some incorporating video clips made by local residents, businesses or govt. agencies
    - A few communities maintained Facebook pages for their CEC participation

Overall, the Challenge was an effective utility-municipal partnership, in that it met some key objectives:

1) Participants designed and implemented creative strategies that linked ComEd's programs to community-based sustainability efforts.
2) ComEd witnessed how communities could effectively leverage existing channels to reach small businesses and other "hard-to-reach" customers.

3) ComEd identified some unique strategies that municipalities used to effect market transformation within their communities.

Some examples of creative strategies and unique partnerships employed by participants are listed below:

Leveraging Existing Processes/Program

- Shared SIYB information with businesses during annual fire inspections
- Used economic development personnel to educate businesses
- Integrated ComEd's appliance recycling program into municipal recycling events
- Integrated ComEd EE program information into contractor licensing and building permitting process
- Distributed CFLs while conducting property maintenance inspections on rental housing

Established Partnerships Motivated by Complementary Interests

- Partnered with the local chamber of commerce to recruit new ComEd trade allies
- Partnered with local business associations to help deliver business incentives
- Partnered with ComEd trade allies and a local university to train student volunteers to conduct high-level energy audits for hard-to-reach small businesses and help them apply for ComEd incentives
- Partnered with citizen environmental groups and school clubs to deliver EE program information
- Partnered with a local community college to offer "green jobs" training

Leveraged Public/Private Funds for Energy Efficiency and Renewable Energy

- Linked utility incentives to energy audit and retrofit grant and loan programs funded by Energy Efficiency and Conservation Block grant dollars
- Used municipal grant and loan programs to promote energy efficiency
- Used private foundation funds to subsidize the cost of municipal EE and renewable energy projects

Accelerated Market Transformation by Making Energy Efficiency Resources Available to the Public

- Made energy monitoring devices available through public libraries
- Created a director of sustainability position in local govt.
- Partnered with a local community college to offer Building Operators Certification and Building Analyst/Building Envelope Certification training
- Shared residential energy code requirements with local design professionals through public training sessions and targeted mailings

Accelerated Market Transformation by Exercising Municipal Authority

- Changed building permitting and inspection processes to enhance energy code compliance
- Adopted a green building ordinance mandating LEED Silver construction for all new commercial, multi-family, and municipal buildings over 10,000 sq.ft.
- Created green permitting incentives
- Incorporated energy efficiency components in existing façade rebate, historic preservation and housing renovation grant programs

V. ComEd Summary

ComEd's *Smart Ideas* portfolio is the product of a three-year plan developed by ComEd in response to Illinois Public Act 95-0481 the purpose of which is to encourage customers to reduce energy consumption.

In Plan Year 2 (June 1, 2009 through May 31, 2010), the *Smart Ideas* portfolio achieved over 472,000 MWh in energy savings, exceeding its statutory goal of 312,339 MWh by 50%.

By the end of its initial three-year plan, the *Smart Ideas* portfolio will put ComEd customers on track to save more than $155 million in energy costs. ComEd customers will continue to save money over the lifetimes of their energy efficiency measures

As a result of lessons learned during Plan Year 2, ComEd is well positioned to develop more innovative energy efficiency initiatives and achieve more aggressive energy savings goals in future years.

VI. DCEO Summary - ComEd Service Territory

Per the Act, DCEO was assigned 25% of the energy efficiency measures, which ComEd and DCEO agreed to define as 25% of the total portfolio spending screen. In addition, DCEO agreed to specific goals defined for the public sector and low income programs. The Act required 10% of the overall portfolio be dedicated for public sector customers. For low income customers, a target of 6% of the overall portfolio was set based on the number of households at or below 150% of the poverty level.

For PY2, DCEO's statutory portfolio goal for the ComEd service territory was 81,352 MWhs. The results for DCEO are summarized in the table below. DCEO achieved 42% of the target, primarily due to the Public Sector Standard initiative program only achieving 30% of its goal. This program made up over 80% of the DCEO portfolio.

ComEd is responsible for administering funds, received from ComEd ratepayers, for the DCEO energy efficiency projects completed within the ComEd Service Territory. For PY2, DCEO submitted funding requests for $16.2M of their spending screen budget of $19.2M. However, ComEd only released $11.5M to DCEO for PY2 as some requests were clearly dated past the PY2 deadline of May 31, 2010 and others had been previously funded in PY1. On advice from legal counsel, ComEd reimbursed the requests dated past May 31st, but as PY3 expenses.

Table VII - 1

DCEO - ComEd Territory PY2 Energy Efficiency Programs	Plan MWH Savings	Navigant Reported Results (Ex Post)	
		MWH Savings	*Pct. Of Plan*
Low Income			
Residential Retrofit Weatherization	969	5,475	*565%*
Residential Retrofit Home Improvement	206	461	*224%*
Residential Energy Efficient Affordable Housing Construction	811	1,484	*183%*
Total Residential	**1,986**	**7,420**	***374%***
Public Sector			
Lights for Learning	4,035	617	*15%*
Prescriptive Incentives	66,016	20,082	*30%*
Custom Incentives	7,375	5,956	*81%*
Retro-Commissioning	2,242	-	*0%*
Total C&I	**79,668**	**26,656**	***33%***
Total DCEO Portfolio - ComEd	**81,654**	**34,076**	***42%***
Statutory Goal	**81,352**	**34,076**	***42%***

VII. Data Tables

Table VIII-1 shows ComEd's performance, by program, for MWh saved. The table compares the Plan estimates with ComEd's Ex Ante results and Navigant's Ex Post results.

Table VIII-1

	ComEd Target	ComEd Reported Results *(Ex Ante)*		Navigant Results *(Ex Post)*	
	MWH Savings	**MWH Savings**	***Pct. Of Plan***	**MWH Savings**	***Pct. Of Plan***
Residential					
Residential Lighting	127,011	145,650	*115%*	202,557	*159%*
Appliance Recycling	23,628	25,997	*110%*	32,624	*138%*
Multi-family All-electric Sweep	1,782	2,735	*153%*	1,840	*103%*
Single Family Home Performance	399	514	*129%*	638	*160%*
CACES	3,893	1,456	*37%*	1,964	*50%*
Total Residential	**156,713**	**176,352**	***113%***	**239,623**	***153%***
C&I					
C&I Prescriptive	152,100	149,465	*111%*	191,896	*138%*
C&I Custom		18,764		17,255	
C&I Retrocommissioning	5,780	6,768	*117%*	6,574	*114%*
C&I New Construction	630	1,098	*174%*	803	*127%*
Total C&I	**158,510**	**176,095**	***111%***	**216,528**	***137%***
PY2 Portfolio Totals	**315,223**	**352,447**	***112%***	**456,151**	***145%***
PY1 CFL Carryover					
Residential Lighting		12,945		12,973	
Small C&I CFL Intro Kit		2,632		3,008	
Portfolio Totals with CFL Carryover	**315,223**	**368,024**	***117%***	**472,132**	***150%***
Statutory Goal	**312,339**	**368,024**	***118%***	**472,132**	***151%***

Table VIII-2 shows the comparison of the Plan budget versus Actual expenditures for PY1 for Rider EDA expenses. It should be noted that ComEd incurred additional internal labor costs that are not included as Rider EDA expenses.

Table VIII-2

	Plannned Budget *	Actual Expenditures
RESIDENTIAL EE PROGRAM COSTS		
Residential Lighting	$ 9,533,000	$ 11,870,351
Appliance Recycling	$ 3,471,000	$ 3,755,623
Multi-family All-electric Sweep	$ 760,000	$ 855,634
Single Family Home Performance	$ 251,000	$ 406,578
CACES	$ 5,278,000	$ 2,993,724
Total Residential Programs	**$ 19,293,000**	**$ 19,881,909**
C&I EE PROGRAM COSTS		
C&I Prescriptive	$ 19,668,000	**$ 17,392,919**
C&I Custom	$ 4,917,000	**$ 3,757,153**
C&I Retrocommissioning	$ 2,115,000	**$ 2,166,948**
C&I New Construction	$ 598,000	**$ 640,888**
Total C&I Programs	**$ 27,298,000**	**$ 23,957,908**
OTHER COSTS		
Demand Response	$ 1,000,000	$ 819,145
DCEO	$ 19,200,000	$ 11,471,616
R&D / Emerging Technologies	$ 2,377,000	$ 1,026,174
M&V	$ 2,377,000	$ 2,377,676
Educational / Outreach	$ 2,800,000	$ 1,031,041
Other Portfolio Costs	$ 4,911,000	$ 2,978,006
Total Other	**$ 32,665,000**	**$ 19,703,658**
Total Portfolio Costs	**$ 79,256,000**	**$ 63,543,475**

* Plan Budget adjusted to Spending Screen for PY2. Original Plan Budget was $81,561,000, of which ComEd's portion was $61,778,000. The Spending Screen reduced the total PY2 budget, but the energy goals remained the same.

Table VIII-3 shows the breakdown of PY2 by contractor, incentive, marketing and labor costs across the programs.

Table VIII-3
PY2 Rider EDA Expenses

	Rider EDA Expenses					TOTAL Rider EDA Expenses	ComEd Labor Non-Rider EDA Expense	Total Portfolio Expenses
	Contractor Costs	Incentive Costs	Marketing Costs	TOTAL Non-Labor Costs	ComEd Labor			
	a	*b*	*c*	*b*	*e*	*f*	*g*	*h*
				a+b+c		*d+e*		*g+i*
RESIDENTIAL EE PROGRAM COSTS								
Residential Lighting	$ 2,206,538	$ 9,074,820	$ 409,989	**$ 11,691,347**	$ 179,004	**$ 11,870,351**	$ 28,841	$ 11,899,192
Appliance Recycling	$ 2,325,217	$ 641,200	$ 680,186	**$ 3,646,603**	$ 109,020	**$ 3,755,623**	$ 165,903	$ 3,921,526
Multi-family All-electric Sweep	$ 360,766	$ 456,884	$ 4,747	**$ 822,397**	$ 33,237	**$ 855,634**	$ 40,104	$ 895,738
Single Family Home Performance	$ 137,185	$ 198,628	$ 37,528	**$ 373,341**	$ 33,237	**$ 406,578**	$ 33,875	$ 440,453
CACES	$ 1,193,824	$ 1,581,450	$ 144,651	**$ 2,919,925**	$ 73,799	**$ 2,993,724**	$ 201,704	$ 3,195,428
Total Residential Programs	**$ 6,223,530**	**$ 11,952,982**	**$ 1,277,101**	**$ 19,453,613**	**$ 428,296**	**$ 19,881,909**	**$ 470,429**	**$ 20,352,338**
C&I EE PROGRAM COSTS								
C&I Prescriptive	$ 4,047,876	$ 12,927,653	$ 173,000	**$ 17,148,529**	$ 244,390	**$ 17,392,919**	$ 95,137	$ 17,488,055
C&I Custom	$ 1,011,295	$ 2,641,511	$ 43,250	**$ 3,696,056**	$ 61,097	**$ 3,757,153**	$ 23,784	$ 3,780,938
C&I Retrocommissioning	$ 650,631	$ 1,382,590	$ 3,270	**$ 2,036,491**	$ 130,457	**$ 2,166,948**	$ 21,603	$ 2,188,550
C&I New Construction	$ 485,723	$ 86,425	$ 6,650	**$ 578,798**	$ 62,090	**$ 640,888**	$ 15,416	$ 656,305
Total C&I Programs	**$ 6,195,525**	**$ 17,038,179**	**$ 226,170**	**$ 23,459,874**	**$ 498,034**	**$ 23,957,908**	**$ 155,939**	**$ 24,113,847**
DEMAND RESPONSE COSTS								
Central AC Cycling [1]	$ 294,803.00	$ 74,995.00	$ 449,347.00	**$ 819,145.00**	$ -	**$ 819,145**	$ 47,300	$ 866,445
DCEO PROGRAM COSTS								
DCEO	$ 11,471,616	$ -	$ -	**$ 11,471,616**	$ -	**$ 11,471,616**	$ -	$ 11,471,616
OTHER PORTFOLIO COSTS								
EIO / Energy Star	$ 579,438		$ 38,939	**$ 618,377.00**		**$ 618,377**	$ 151,031	$ 769,408
Eduational Outreach	$ 423,138		$ 607,903	**$ 1,031,041.00**		**$ 1,031,041**		$ 1,031,041
R&D / Emerging Technologies	$ 1,026,174			**$ 1,026,174.00**		**$ 1,026,174**		$ 1,026,174
Measurement & Verification	$ 2,377,679			**$ 2,377,679.00**		**$ 2,377,679**		$ 2,377,679
Portfolio Administration	$ 936,640			**$ 936,640.05**	$ 1,422,986	**$ 2,359,626**	$ 685,409	$ 3,045,035
Total Other	**$ 5,343,069**	**$ -**	**$ 646,842**	**$ 5,989,911**	**$ 1,422,986**	**$ 7,412,897**	**$ 836,440**	**$ 8,249,337**
Total Portfolio Costs	**$ 29,528,543**	**$ 29,066,156**	**$ 2,599,460**	**$ 61,194,159**	**$ 2,349,316**	**$ 63,543,475**	**$ 1,510,108**	**$ 65,053,583**

1) Central AC Cycling contractor costs represent capitalized costs recovered through Rider EDA

VIII. ComEd Differences with PY2 Evaluation Reports

In the course of reviewing evaluation reports, ComEd has found various areas where it disagreed with the methodology employed by Navigant. Many individual issues were identified and resolved during reviews and follow-up discussions. ComEd feels the following items are worth noting.

Residential Lighting Program

The final evaluation used deemed savings for CFL bulbs as indicated in the ICC Order for 07-0540. However, the initial course of evaluation looked at secondary sources for methodology to determine Delta Watts, Hours of Use (HOU), Peak Coincidence factor. As part of the deemed savings, only delta watts and hours of use were maintained as being part of proposed savings from ComEd's original filed plan. The peak coincidence factor was modified based on regression analyses performed in California. Prior to realizing that CFL measures savings were deemed, Navigant's suggested methodology was to utilize methodologies developed in California evaluations to estimate delta watts and hours of use.

The delta watt formula is called the DEER Power Reduction Factor which simply assumes the delta watts for a replaced CFL is 2.53 times the CFL wattage. Comparing these results to its experience in Illinois, caused ComEd to question its reasonableness. The majority of CFL bulbs sold were 13W, which based on Energy Star guidelines and packaging on the bulbs suggests replacing a 60W incandescent, for a delta watts of 47. The Power Reduction Factor equation results in 32.9 delta watts, a 30% reduction. Although there may be times when the replaced incandescent is smaller than 60W, 32.9W essentially assumes 70% of the time a 40W bulb is

replaced and 30% of the time a 60W bulb is replaced. This is contrary to ComEd's understanding of the local lighting market, and may not reflect how local consumers would act.

For HOU, Navigant proposed a regression analysis developed in California known as the ANCOVA HOU model. This model was developed from surveys and on-site visits in California and reflect how consumers in that state operate lighting in different applications, e.g. bedrooms, bathrooms, kitchens, outside, etc. Given the number of lighting sockets and their distribution, the equation estimates the average hours of use per bulb. Besides differences in consumer behavior and CFL saturation between California and Illinois, an important coefficient in the equation is based on previous findings for a California utility. In Navigant's final evaluation report, they assigned the average utility coefficient to represent ComEd. This equation hasn't been validated in other parts of the country, and ComEd noticed that the largest available HOU result was considerably lower than a recent lighting logger study in the Northeast. ComEd has a lighting logger study underway, which should be used to validate these type of results for Illinois.

Similar to the HOU analysis, a California ANCOVA CF model was used to determine the lighting peak coincidence factor in Illinois. This changed has remained in the evaluation report because the deemed savings from the ICC Order did not address kW savings. Again the concern is that these changes do not necessarily reflect Illinois consumers and should be validated with information being collected in the lighting logger study.

For changes to parameters like those described above, ComEd suggests that data be gathered from consumers in Illinois and final determinations be reviewed and vetted with the utility,

Stakeholder Advisory Group, and ICC Staff. The evaluators have suggested these California methods are more precise, but they may only add precision to an incorrect value.

In a separate area, ComEd suggests more in depth analysis to determine the Net-to-Gross (NTG) ratio for lighting. In PY2, the NTG was determined largely from self-reports from consumers, despite Navigant's earlier proposal to use more sophisticated methods. ComEd has tried to change the way retailers sell CFLs, and has been part of the movement toward market transformation. In order to capture full program influence, Navigant should consider measuring retail shelf space, before and after the program, to demonstrate the program's effect on energy efficient lighting stocking practices. Also as seen in PY2, program CFL sales dramatically increased as the incentives increased. Given that the retailers supply the sales data on a weekly basis, this data can be used to determine the correlation between incentives and sales by studying the change in sales before and after an incentive change. In addition to consumer self reports, these two practices should help identify a more accurate NTG and be more indicative of what is actually happening in the marketplace.

All Electric Efficiency Upgrade

In the evaluation of the Multi-family All Electric Efficiency Upgrade program, which is a direct install program, Navigant conducted surveys to determine the mean occupancy of the units upgraded. This occupancy rate is used to derive expected water usage per housing unit. For showers, the measure assumption used a census average of 2.35 persons/unit; 0.7 showers/person/day; and 8.2 minute shower length. These base assumptions were provided by Navigant in a review of ex ante savings for water measures in January 2010. The PY2 evaluation focused on the occupancy rate of persons/unit, although water usage is the important

factor. Navigant's finding was a mean of 1.66 persons/unit. This change reduced the expected savings from this program by 475,672 net kWh.

ComEd objected to the cursory analysis in changing this parameter. Of the possible 4,219 residences, the phone survey had 74 replies for occupancy. This represents 1.8% of the total population and 3.3% of the 2,284 sample pulled to survey. There were 30 surveys not conducted because of language barrier, which is over 9% of the people actually reached on the phone. The sample pulled was also not entirely representative of the overall participants, as tracking data indicated that 87% of participants leased their housing unit, while only 71% of the survey population leased. This level of sampling and representation would not be accepted by communities for population estimates –essentially its purpose here.

In terms of statistics, the determined mean of 1.66 had a standard deviation of 0.8645, but the realistic minimum is 1.0, otherwise no one lives in the unit. This indicates that the minimum is less than one standard deviation from the mean and therefore the overall distribution is not normal. More data would greatly help the reliability of this occupancy estimate.

The evaluation based the occupancy estimate on self-reports via phone survey. However, no adjustments were made from other survey results. In addition to asking for number of year-round residents, demographics on age were obtained, but summing these responses results in more people in the units than reported with the occupancy question. Also data on showers/week and length of showers were collected but not used. This data suggested water usage 63% higher than the baseline estimates, which could have increased Navigant's verified savings by 755 MWh.

Much of the baseline per unit data was developed on census type averages, which would include children. If fewer children are present, the relevant averages of measures such as showers/person/day could be higher than those based on national averages. These types of adjustments were not attempted. Overall, focusing on occupancy doesn't fully capture the expected change in water usage and therefore program savings. More in-depth analysis would be appropriate before revising these basic parameters.

C&I New Construction

In PY2, there arose a situation in which Navigant disallowed 81 MWh of savings due to inadequate documentation. ComEd, Navigant, and ECW, the implementer, are working to mitigate this type of situation in the future.

The New Construction evaluation is largely based on desk review of documentation and savings calculations. In this particular case, the customer would not allow photos taken to serve as documentation. Although not originally in the budget, Navigant sent a representative to visually verify installation. That person verified that the installed equipment did not match the original plan on which savings were calculated. However, the representative did not recognize that the installed equipment was actually more efficient than the original plan. ComEd believes the savings should have been at least the originally estimated value of 81 MWh.

Although Navigant tried to address this disagreement, the budgetary restrictions for this particular program limited final resolution. Although desk review is quite appropriate for the type and size of this program, some budget should be allotted to resolve issues like this in the field with properly trained personnel. ComEd is also pushing its implementation team to improve its

documentation submitted for evaluation and insist that customers accommodate providing required documentation.