

Commonwealth Edison Company's
Energy Efficiency / Demand Response Plan
Annual Report
Plan Year 3

June 1, 2010 – May 31, 2011



June 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
PLAN YEAR 3 RESULTS.....	5
BANKING	6
HIGHLIGHTS OF COMED SMART IDEAS' PY3 INCLUDE:	7
KEY CHALLENGES IN PLAN YEAR 3.....	9
I. COMED'S VIEW ON SELECT EVALUATION METHODOLOGY ISSUES	11
II. SMART IDEAS FOR YOUR HOMESM	15
RESIDENTIAL ENERGY STAR® LIGHTING	15
APPLIANCE RECYCLING	19
ALL-ELECTRIC EFFICIENCY UPGRADE.....	22
SINGLE FAMILY HOME PERFORMANCE	26
CENTRAL AIR CONDITIONING EFFICIENCY SERVICES (CACES)	29
CENTRAL AIR CONDITIONING CYCLING	32
HOME ENERGY REPORT	34
III. SMART IDEAS FOR YOUR BUSINESSSM	37
PRESCRIPTIVE AND CUSTOM INCENTIVES	37
COMMERCIAL & INDUSTRIAL RETRO-COMMISSIONING.....	43
COMMERCIAL & INDUSTRIAL NEW CONSTRUCTION	46
ENERGY INSIGHTS ONLINE (EIO)	50
ENERGY USAGE DATA SYSTEM.....	51
IV. R&D / EMERGING TECHNOLOGIES	52
SMALL C&I DIRECT INSTALL PROGRAM.....	52
V. COMED SUMMARY	53
VI. DCEO SUMMARY - COMED SERVICE TERRITORY	54
VII. DATA TABLES	56
VIII. COMED DIFFERENCES WITH PY3 EVALUATION REPORTS	59

Executive Summary

This report provides a comprehensive update on the third year¹ performance of ComEd's Energy Efficiency / Demand Response Portfolio. It is intended to provide an outline of the successes and challenges encountered during Program Year 3 ("PY3"), as well as highlight adjustments and changes that will be implemented to improve overall portfolio performance in Program Year 4 ("PY4").² A brief summary of PY3 DCEO-sponsored program results in ComEd's service territory is also provided in Section VI.

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. Joint residential pilots for multi-family and single family between ComEd and Nicor and

Integrus gas companies were started in Program

Year 3. We also coordinated with the gas

companies on C&I programs with planned PY4

launches. 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
- Multi-Family Direct Install Joint
- Single Family Joint Programs
- Single Family Home Performance
- Central AC Efficiency Services (CACES)
- OPOWER Home Energy Reports Pilot Program
- Central Air Conditioning Cycling

Business Initiatives:

- Prescriptive and Custom Incentives
- Retro-Commissioning
- New Construction
- Mid-Stream C&I Lighting

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

- Create value for customers through a range of customer energy efficiency initiatives

¹ The third plan year runs from June 1st, 2010 through May 31st, 2011.

² Evaluation reports for Plan Year 3 programs are attached at the end of this report.

- Meet statutory goals specified in the law while adhering to the spending screens
- Lay a solid foundation for energy efficiency programs going forward by investing in the program infrastructure needed to support comprehensive and integrated approaches to energy efficiency
- Develop a diverse portfolio of programs that minimizes portfolio risk while offering numerous energy efficiency opportunities across all customer groups
- 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 third-program-year annual energy efficiency and demand reduction targets of 458,919 MWh and 10.0 MW, respectively. ComEd’s ex post verified savings were 626,715 MWh and 14.72 MW, exceeding statutory goals by 37% and 47%, respectively.

ComEd originally set an internal net MWh target of 485,789 MWh for Plan Year 3. The higher target was set due to the uncertainty surrounding how independent evaluation would impact our reported results. The PY3 portfolio budget was \$126.6M initially, but the spending screen determination reduced the overall amount to \$120.7M, of which ComEd’s portion was \$91.4M. 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.

Performance data related to these areas are included in Section VI of this report.

Plan Year 3 Results

ComEd launched its Plan Year 3 *Smart Ideas* portfolio of energy efficiency incentives on June 1, 2010 and ended May 31, 2011. Verified results show that ComEd had exceeded its statutory targets for energy efficiency and demand response. Table ES-1 represents energy efficiency savings achieved for PY3. This table indicates the ex ante savings estimates by ComEd and the verified ex post savings determined by the independent evaluator. In addition to program activity in PY3, there is recognition of savings from the deferred installation (“CFL Carryover”) of CFL bulbs purchased during PY1 and PY2 from Residential ENERGY STAR Lighting and Small C&I Intro Kit. This data is sourced from independent evaluator Navigant’s final report.

Table ES-1

Energy Efficiency Initiative	Ex Ante Estimated Net Savings (MWH)	Verified Net MWH Savings Achieved
Residential ENERGY STAR Lighting	232,975	264,631
Appliance Recycling	33,093	44,851
All-Electric Efficiency Upgrade	2,652	4,216
Multi-Family Direct Install Joint	6,056	6,455
Single Family Home Performance	343	369
Single Family Joint Programs	1,663	2,130
Central AC Efficiency Services (CACES)	2,164	2,225
OPOWER Home Energy Reports Pilot	9,600	13,479
C&I Prescriptive and Custom Incentives	219,759	214,897
Mid-Stream C&I Lighting	864	916
C&I Retro-Commissioning	19,376	15,382
C&I New Construction	6,258	5,963
CFL Carryover	48,977	51,201
Total Net MWh Saved	583,780	626,715
Statutory Goal	458,919	458,919
MWhs over Goal	124,861	167,796
MWhs (% of Goal)	127%	137%

Smart Ideas also delivered 14.7 MW of demand response through its Central Air Conditioning Cycling initiative by adding over 10,180 new participants, exceeding its statutory goal of 10.0 MW, or by 47%.

Banking

The ICC Order for Docket 07-0540 allows for energy savings to be “banked” for future use, limiting ComEd to 10% of the energy savings above the statutory goal. ComEd proceeded planning on banking its excess savings, up to 10%, above its portion of the statutory goal. In ICC Order for Docket 10-0520, covering goal compliance of PY2, the definition of banking was set for the Docket 07-0540 Order to allow banking only in excess of the total service territory statutory goal. Part of the rationale for the change was that banking was “a gift” in the original order and ComEd could not be harmed. As a result, ComEd’s expected banking for PY1 was eliminated, dropping from 14,875 MWh to 0 MWh since DCEO was far short of their portion of the goal. For PY2, DCEO again was short of their portion of the goal, but ComEd far exceeded its goal by 159,793 MWh and in accordance with the Docket 10-0520 Order will bank 10% of the total goal, which is 39,369 MWh. For PY3, ComEd again far exceeded its statutory goal, but DCEO again was short. Based on the Docket 10-0520 Order, ComEd will bank 10% of the statutory goal of 584,077 MWh or 58,408 MWh, versus ComEd’s total excess of 167,796 MWh.

In total, ComEd’s banking for the PY1 – PY3 period is 97,777 MWh. If all excess savings could be banked, as it is starting in PY4, the performance of DCEO would have dramatically impacted ComEd’s available banking. To illustrate, if all excess savings could have been banked in PY1 – PY3, ComEd would have lost 133,179 MWh in total banking due to DCEO’s performance versus basing it solely on ComEd’s requirements and achievements. Table ES-2a summarizes

banking of excess savings from PY1 to PY3 if ComEd's original methodology were used and Table ES – 2b shows expected banking with methodology in the Order for Docket 10-0520. Banked savings can be used to meet ComEd's statutory requirements in future years.

**Table ES-2a
Portfolio Banking (Net MWh) - Original ComEd Method**

Plan Year	Net Results	Statutory Goal	Potential Banking (10% limit)	Actual Banking	Cumulative Banked
PY1	163,717	148,842	14,884	14,875	14,875
PY2	472,132	312,339	31,234	31,234	46,109
PY3	626,715	458,919	45,892	45,892	92,001
Total	1,262,564	920,100	92,010	92,001	92,001

**Table Es-2b
ComEd Portfolio Banking (Net MWh) – Revised Method (Docket 10-0520)**

Plan Year	ComEd Net Results	DCEO Net Results	Statutory Goal	Potential Banking (10% limit)	Actual Banking	Cumulative Banked
PY1	163,717	17,377	188,739	18,874	0	0
PY2	472,132	34,076	393,691	39,369	39,369	39,369
PY3	626,715	54,130	584,077	58,408	58,408	97,777
Total	1,262,564	105,583	1,166,507	116,651	97,777	97,777

Highlights of ComEd Smart Ideas' PY3 include:

- ComEd's PY3 portfolio was cost-effective. Based on Illinois' version of the Total Resource Cost (TRC), which includes societal benefits for CO2 emissions reduction, ComEd's PY3 portfolio TRC was 1.69 versus the requirement of 1.0³.
- Growth in the energy efficiency portfolio brought an additional **70 direct jobs to the ComEd service territory** on top of the 84 direct jobs from PY2 and helped to lay a

³ For the Illinois TRC calculation, CO2 reductions were valued at \$0.013875/kWh

foundation for a robust energy efficiency implementation industry in Northern Illinois. The total estimate of 154 does not include the installation labor required for many of the energy efficiency measures.

- **More than 11 million compact fluorescent lamps (CFLs)** were **sold** through **12** participating retail chains and more than **600** individual store locations.
- **Over 40,000 inefficient appliances (i.e., refrigerators, freezers, room air conditioners)** were **removed from the ComEd system** and recycled in an environmentally friendly manner.
- **Over 50,000 homes** received low-cost energy efficiency product upgrades as part of the All-Electric Efficiency Upgrade (i.e. Multi-Family), Single Family Home Performance initiatives and Joint Programs with the Gas Companies.
- **There were 410 trade allies enrolled** in *Smart Ideas*' Commercial and Industrial (C&I) Prescriptive and Custom Incentives initiative.
 - More than \$23 million were paid in incentives for over 4,400 projects, resulting in \$140 million invested in energy efficiency upgrades in the business sector.
- Retro-Commissioning **completed 34 projects**, up from 14 in PY2, and already **accepted 45 projects for completion in PY4.**
- **C&I New Construction achieved 312% of its PY3 goal**, completing 37 applications and adding 114 applications to its pipeline between PY4 – PY8. The program is focusing on the longer-term comprehensive projects.

Key Challenges in Plan Year 3

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 third-year goals to ensure statutory targets would be met.

Although ComEd's residential programs exceeded expectations during PY3, ComEd feels that its overall success requires growth of its business programs. In PY3 there was an increase from 2,079 to 4,407 customer projects in the Prescriptive/Custom Program. However, net savings only increased from 209,151 MWH to 214,897 MWH. Overall, the size of projects dramatically decreased from PY2 to PY3. This has caused implementation costs to rise as it is not much harder to administer large projects as small projects.

The economy continues to be a general challenge across all programs, especially apparent in C&I programs. Energy efficiency is considered a positive by customers; however, many customers did not want to commit to energy efficiency projects. We expect more customers will consider energy efficiency projects after the economy improves.

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

- Additional tactics and new channels to attract new customers had to be developed to promote program growth.
- Starting joint coordination activities with our service territory gas companies required a significant amount of time and effort from implementation teams, not directly related to PY3 results.

- Maintaining participation throughout the year for the Appliance Recycling program. ComEd applied its most intensive marketing efforts to Appliance Recycling, and has been able to maintain strong customer program participation.
- Despite program restructuring and attention to contractor performance, the CACES Program could not achieve needed activity to become cost effective and continue operating. The program was continued through the summer cooling season of PY4 to maintain strong relationships with HVAC contractors. Although this program was cancelled, we expect to offer some type of residential AC programs in the future.
- Across all programs there is always the challenge of expanding implementation efforts while maintaining high customer satisfaction.
- On an Ex Post basis, there were several C&I programs with lower than expected NTG ratios. This resulted in lower savings than projected.

I. ComEd's View on Select Evaluation Methodology Issues

Uncertainty in results from retroactive evaluation

This uncertainty was discussed in ComEd's PY2 Annual Report as a risk concern. Frameworks to allow prospective application of realization rates and Net-to-Gross factors were developed as part of a Settlement Stipulation among stakeholders in Docket 10-0570 and included in ComEd's 2nd three-year plan. This will allow some PY2 factors to be used in PY4 and factors evaluated during PY3 to be used in PY5. For PY3 itself, the only deeming applies to kWh for CFLs.

Determining Evaluation Components for Illinois

Although using secondary sources for evaluation algorithms was identified as a potential problem in ComEd's PY2 Annual Report, during PY3 there has been general agreement to use as much Illinois-based data as possible. During PY3, a residential lighting logger study was conducted in ComEd's service territory. Hours-of-Use (HOU) were determined based on locations of CFLs as customers were using them. Additional surveying was done to provide data for multi-state regression analysis. The HOU determination will be used as the default value going forward, until new studies are performed.

C&I Baseline issues

Determination of appropriate baseline became an issue for the Custom program in PY3. Often the issue started with determining the Remaining Useful life (RUL) in industrial applications where customers have many options in prolonging equipment life and therefore estimates of remaining life. In other cases, commercial building energy codes are used to establish

efficiency baselines for industrial process applications, but industrial manufacturing processes are vastly different from commercial building operations and really have no direct applicability.

The current practice is for the independent evaluator to determine a “predominant baseline” expected over the lifetime of equipment. When existing equipment is “old” and older than the Estimated Useful Life (EUL) for typical equipment, only new equipment is considered as the baseline since existing equipment should effectively be retired, which can result in no savings from retiring inefficient equipment. From a customer viewpoint, conversion to new equipment may not be justified in today’s economy, and the customer can continue operating his existing equipment. Sometimes new equipment does not offer varying degrees of energy efficiency, but today’s standard equipment can be much more efficient than the existing equipment installed 20 to 30 years ago.

ComEd is interested in finding a framework to allow customers to replace older, inefficient equipment within our EE Programs. Although replacing customer equipment with the most efficient equipment is theoretically ideal, customers have many options to keep their equipment running for many years beyond their expected lives at lower costs. Continually using predominant baselines to determine eligibility for incentives will not encourage customers towards early retirement of older, inefficient equipment due to a lack of incentives. We believe this is not in the spirit of the overall statewide effort to improve energy efficiency.

TRC issues

Following the evaluation of programs, TRC calculations were made for each program and the portfolio as a whole. Per Section 12-103 of the Public Utilities Act, only the overall portfolio TRC is required for cost effectiveness. ComEd has found using the aggregation tool in DSMore,

which draws on individual spreadsheet results, is the best way to calculate portfolio results. However, ComEd does internally examine program level results to better understand programs and identify potential concerns on cost-effectiveness and new measures added to programs are evaluated for cost effectiveness. Over thirty DSMore analyses were conducted on PY3 programs and pilots, and many more for measures level screening throughout the year. Overall, the PY3 portfolio TRC was 1.69, and ComEd would have had to increase its costs by more than \$110 million to reduce this TRC below 1.0.

At the request of ICC Staff, ComEd has included in the portfolio TRC calculation marketing costs incurred by ComEd's Communication Department, as part of their energy efficiency educational efforts, in the Miscellaneous/Other cost category. This specifically includes print ads which identify the Appliance Recycling program (\$67,600), even though these ads were not sponsored by the EE Programs and are not part of the EE marketing plan. Besides lack of control over the advertising, these ads do not include the *Smart Ideas* brand which is very important for our marketing efforts. There are other advertising costs for the energy efficiency campaign, but they are not broken down between categories directly referencing EE programs and those of a more general nature. If the total EE advertising cost of \$2,651,320 are excluded, the resultant portfolio TRC is 1.72, but ComEd is stating 1.69 to be conservative. Although the TRC remains well above the 1.0 minimum, ComEd does not believe that advertising costs, not directly controlled by the ComEd EE team, should be included in the TRC.

One problem with program level TRC costs is the assignment of some expansion and development costs to a current year, where the savings impact will occur in later years. This mismatch of costs and savings has highly skewed PY3 results for two programs, Home Energy

reports and Retro-Commissioning (RCx). This type of problem should disappear after the programs reach more of an equilibrium level.

In the case of Home Energy reports, there were substantial costs associated with expanding the pilot into a full fledged program for PY4. The actual operational costs during PY3 included \$417k for implementation and \$115k for ComEd administration, but an additional \$30k was incurred in PY3 for evaluations of the original PY2 pilot and another \$1.6M was spent to prepare for PY4, which has a fourfold increase in customers. The TRC, including the \$1.6 million in developmental costs, is 0.39, but the TRC based only on current operating costs is 1.61, which is more representative of expectations going forward.

Similarly within the RCx program, our PY4 Compressed Air Program was being developed, and those developmental costs were included in the RCx Program costs. Additionally, project development can be very long and some costs spent today may be more directly applicable to projects, and therefore kWh savings, completed in future program years. Without being able to isolate these effects, the PY3 RCx TRC is 0.70, but ComEd does not believe this TRC is truly indicative of the program. As the RCx program reaches an equilibrium level, the year-to-year difference in cost and savings should disappear, and additional development costs for the Compressed Air Program will be directly assigned to that program. ComEd will review different aspects of the RCx program during PY4.

II. Smart Ideas for Your HomeSM

Smart Ideas for Your HomeSM is comprised of a diverse set of residential incentives, each targeting either a specific energy end-use such as lighting or adopting multiple measures within a home. In Plan Year 3, *Smart Ideas for Your Home* achieved 338,356 MWh of energy savings, corresponding to 168% 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.

Participating Retailers

Type of Store	No. of Stores	No. of CFL Products Sold
Big Box / Do-It-Yourself	219	6,767,883
Warehouse	37	3,662,570
Small Hardware	146	541,517
Grocery/Drug	272	225,892
Total	674	11,197,862

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.

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. Independent evaluator conducted metering study to establish Illinois basis for average hours of use and peak coincidence factor.

CFL Recycling

ComEd partnered with three major hardware retailers to educate consumers on the proper techniques of CFL disposal and helps subsidize their programs to offer CFL recycling free of charge to customers. As a result, approximately 187,000 CFLs have been recycled since program inception.

Plan Year 3 Activity

By mid-year in PY3 the targeted sales of CFLs were raised from 10.7 million to 11.1 million based on performance at that time. This followed the steep ramp-up in PY2 from 4.7 million bulbs. Increasing the implementer's effort on distribution channels and field representation was needed to maintain these high levels of sales. Since PY1, the number of participating storefronts have increased 31%, field representatives have increased 75%, and in-store

demonstration have increased 119%. This program met its revised target for sale of CFL bulbs, and given all PY3 evaluation parameters, the program far exceeded net MWh targets.

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

- Adding three new retailer chains 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 more ENERGY STAR lighting fixture products eligible for discount
- Increasing the number and frequency of in-store retail demonstrations
- Getting product displays and shelf inventories placed in more visible areas

Table II-1 presents the initiative’s accomplishments.

**Table II-1
Program Metrics**

Program Statistics	Quantity
Standard CFLs sold	9,893,196
Specialty CFLs sold	1,217,723
Fixtures sold	86,943
Total CFLs sold	11,197,862
Participating storefronts	674
Field reps	14
Field rep demonstrations	300
Retail stores offering free recycling (possible through ComEd and Retailer subsidies)	202

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

Table II-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	149,322	232,975	264,631	177%

Key Accomplishments

- Increase number of product types (SKUs) across all retailers
- Decreased package sizes of bulbs at some larger warehouse stores. Most bulbs were sold in packages of four or less.

Key Challenges in Plan Year 3

A key challenge for PY3 was the ratcheting up of program goals. PY2 had been a stretch to support the final sales level, and PY3 eventually was committed at a higher level. Expansion of stores and SKUs were necessary to maintain this high level. Maintaining inventory at select retailers became difficult.

There were pricing challenges on some products with discrepancies between shelf price and actual prices. However, ComEd’s review showed that the price at the register was displayed correctly - with the incentives in place.

Key Activities for Plan Year 4

The PY4 sales target is 12 million bulbs and 101,000 fixtures — a total increase of 9 percent from PY3 revised 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 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
- Monitoring potential impacts from rising CFL prices and EISA restrictions on 100W bulb production
- Educating customers about the impacts of EISA

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 \$35 incentive and free pickup. This is a \$10 increase from the incentive paid in PY2. This increase occurred during PY3 after participation rates were shown to increase significantly with an incremental increase in incentive level. JACO Environmental recycles the units in their Illinois-based facility to ensure that CFCs, foam insulation, and other materials in the old appliances are

handled in accordance with the Environmental Protection Agency's *Responsible Appliance Disposal (RAD) Program*.

Customers can receive \$35 payments for 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 must also 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 an additional rebate.

Plan Year 3 Activity

The Appliance Recycling program surpassed its third-year MWh goal by more than 83 percent, while remaining within 9 percent of its planned budget. Additional marketing efforts were made to maintain participation during the typically slow winter period. The retail segment of the program was expanded to include a total of three major retailers. Table II-3 details key measures of program performance.

**Table II-3
Program Metrics**

Program Statistics	Quantity
Refrigerators recycled	33,937
Freezers recycled	6,046
Room air conditioners recycled	1,041
Total appliances recycled	41,024
Number of Enrollments	44,651
Number of JACO employees	16
Number of JACO trucks	5
Estimated tonnes of CO2e reduced	31,717
Harvest Rate	80% ⁴

⁴ 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.

Table II-4 shows the actual MWh saved compared to the initiative’s plan:

Table II-4

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated <i>Ex Ante</i> Savings (MWh)	Navigant Verified <i>Ex Post</i> Savings (MWh)	Pct. of Goal
Appliance Recycling	24,477	33,093	44,851	183%

Key Accomplishments

- The program exceeded its MWh goal of 24,477 MWh by 83 percent
- Harvest rate improved to 80% (From 74% in PY2)
- A customer satisfaction rate of 97% where customers would recommend program to a friend or colleague

Key Challenges in Plan Year 3

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 marketing 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 sufficient response to meet higher goals. To get back on track, a marketing strategy was deployed which included the testing of various incentive levels. This strategy was proven effective in increasing participation levels given a higher incentive offer, which was later adopted for the remainder of PY3.

The harvest rate for participants remained consistently around 80 percent, slightly better than industry norms, but significant nonetheless in terms of missed unit volume and energy savings.

Key Activities for Plan Year 4

The goal for PY4 is to achieve 33,371 MWh in savings which equates to a 36 percent increase over PY3's goal. In order to meet the PY4 goal, even more participants are needed than the record setting PY3. Key activities include:

- Evaluating impacts from increasing incentives and resulting changes in participation rates
- Conducting market research on customer perceptions of the program and why they used this service for discarding old appliances
- Adjusting marketing activity to better target likely participants

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.⁵ During PY3, ComEd collaborated with the two of the three gas companies in its service territory, Nicor and Peoples Gas, on jointly operated pilot programs providing similar direct-installed measures in buildings with gas water heaters. ComEd only claims kWh savings, while gas companies claim any therm savings. Through coordination with the joint programs,

⁵ This initiative does not focus on low-income housing, which is covered by the Illinois Department of Commerce and Economic Opportunity.

ComEd discovered additional multi-family buildings using electric water heating for its all-electric program.

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 Businesssm program. With the initial roll-out of the Small Business C&I Program in PY4, these building opportunities will initially be forwarded to that 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 3 Activity

Table II-5 summarizes the initiative’s activities in terms of surveys and direct installs for the all-electric program and combined metrics for the joint pilots:

**Table II-5
Program Metrics**

Program Statistics	All-Electric Quantities	Joint Program Quantities
Number of participating buildings	68	449
Number of units surveyed	5,881	40,866
Number of units upgraded	5,500	36,731
Completion of goal rate	100%	99.6%
CFLs installed	29,103	179,401
Faucet aerators installed	10,425	NA
Showerheads installed	4,808	NA

Table II-6 compares Navigant’s ex post estimates of savings with ComEd’s initial goal and its ex ante estimate of MWh saved. Also included are the total results from the joint programs with Nicor and Integrys.

Table II-6

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated <i>Ex Ante</i> Savings (MWh)	Navigant Verified <i>Ex Post</i> Savings (MWh)	Pct. of Goal
All-Electric Efficiency Upgrade	2,369	2,652	4,216	178%
Multi-family Joint Programs	NA	6,056	6,455	NA

Key Accomplishments

- Educated landlords, owners and property management personnel regarding energy efficiency measures' money saving potential
- Upgraded more than 5,500 units with energy efficient measures in all-electric program, including more than 29,100 CFLs, and left behind educational material to promote behavioral change and participation in other *Smart Ideas* offerings
- The joint programs with the gas companies identified additional buildings which could be served by the all-electric program
- Participated in pilot programs with gas companies, resulting in nearly 7,000 MWh of savings from more than 179,000 CFLs installed

Key Challenges in Plan Year 3

Initially, key challenges were identifying properties eligible for the all-electric program and launching the joint programs, ComEd and Honeywell identified several obstacles:

- 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 property for upgrade measures.

- The total number of units for PY3 was increased from 4,500 to 5,500 units due to the discovered electric water heating units found during the Joint Multi-family programs with Nicor and Peoples Gas.
- With the inclusion of joint gas pilots, much time and effort was spent working with the gas companies, their program administrators and the program implementers. Honeywell assumed full implementation responsibilities when they replaced one of the original implementers late in the first quarter. Although there was considerable coordination in developing the joint program frameworks, the amount of work was challenging for all parties.

Key Activities for Plan Year 4

For PY4, the all-electric program will be replaced with the joint programs. All-electric and properties with electric water heating interested in participating can do through the joint programs. Due to its success in PY3 of identifying electric water heated buildings, ComEd does expect to claim water heating savings in some cases. The costs to provide services to these buildings will be borne by ComEd.

Important activities in PY4 will include coordinating with the gas companies and their program administrators, and expanding the number of implementers.

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 for a small co-payment (\$25).⁶

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

Through ComEd's implementation contractor, Honeywell Utility Solutions, homeowners 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* programs. The homeowner pays a \$25 co-payment for this program to partially offset the audit cost and assure more customer engagement and reduce cancellations.

In PY3, ComEd participated in joint pilot programs with Nicor and Integrys (Peoples Gas) gas companies to offer similar services to customers using gas hot water heaters and gas heating. Each pilot was different and led by gas company implementers. In large part, ComEd's energy saving benefits were limited to direct installation of CFL bulbs. There were also some derived electric benefits from Nicor's weatherization program, where customers received specific weatherization measures to be installed by a program contractor.

⁶ This initiative does not focus on low-income housing, which is covered by the Illinois Department of Commerce and Economic Opportunity.

Plan Year 3 Activity

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

**Table II-7
Program Metrics**

Program Statistics	All-Electric Quantities	Joint Program Quantities
Number of participating homes	438	7,476
Homes receiving CFLs	422	7,401
Homes receiving showerheads	383	NA
Homes receiving kitchen aerators	287	NA
Homes receiving faucet aerators	410	NA
Homes receiving pipe insulation	361	NA
Homes receiving DHW turndown	37	NA
CFLs installed	3,819	60,621

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

Key Accomplishments

- Designed joint pilots with Nicor and Integrys gas companies
- Upgraded over 7,900 homes with energy efficient measures, including more than 64,400 CFLs, and left behind educational material to promote behavioral change and participation in other *Smart Ideas* offerings
- Savings from weatherization measures were only achieved in the retrofit pilot program with Nicor, contributing 75 MWh of net savings. These measures will be evaluated more completely in joint programs

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	2,473	343	369	15%
Single Family Joint Programs	NA	1,663	2,130	NA

Key Challenges in Plan Year 3

The key challenge for this program was achieving participation. There are approximately 10,000 ComEd customers who qualify for this program. Multiple marketing tactics were offered to eligible customers to enroll, including waiving the \$25 co-payments, making follow-up phone calls to encourage participation, and providing a chance to win a \$500 gift certificate from the Home Depot. 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.

As stated previously, ComEd participated in joint programs with the gas companies. Significant time was spent developing effective program designs, coordinating with the gas companies and their program administrators, and on-boarding new program implementers.

Key Activities for Plan Year 4

The lack of potential of the all-electric single family homes market and the availability of joint programs allows ComEd to expand single family program offerings with the gas companies going forward. The joint program with Nicor will replace the current ComEd single family program. Integrys does not plan to have a program ComEd would participate in PY4.

Similar to the multi-family program, if ComEd discovers single family homes that could be served under an all-electric program, or at least electric water heating, these homes will be served by the joint program. The costs to provide services to these homes will be borne by ComEd.

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 element, 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 device that provides the technician with equipment performance information, monitors the air conditioner's operating condition in order to achieve optimal system settings, and records before and after efficiency parameters.

The 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 3 Activity

In the original plan, the participation goals included 16,200 tune-ups and 43,572 installations. The expected resulting energy savings were 4,495 MWh and 18,033 MWh, respectively. The total program energy savings goal was revised to 2,552 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 PY3, 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 II-9 shows several significant statistics for the first year of the program:

**Table II-9
Program Metrics**

Program Statistics	Quantity
Tune-ups performed	14,550
QIV installations	1,095
QIV installations w/ SEER 14+	592
Participating contractors	129
Service Assistant tools	260
Incentives paid	\$1,330,172

Table II-10 shows the actual MWh saved compared to the program’s plan:

Table II-10

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated <i>Ex Ante</i> Savings (MWh)	Navigant Verified <i>Ex Post</i> Savings (MWh)	Pct. Of Goal
CACES	22,528	2,164	2,225	10%

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 3

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:

- An on-going, prolonged period of weakened economic conditions not experienced in several decades, continues to be a factor in both customer spending and contractor operations.
- Weather conditions in April 2011 were some of the coolest in the past 30 years and resulted in virtually no activity for the entire month when thousands of pre-season maintenance checks usually occur.

- The type and volume of work experienced has resulted in significantly lower than expected energy savings and made it extremely challenging to make CACES a cost-effective program.
- Customers generally tend to feel more comfortable with contractor referrals from family, friends, and neighbors or they simply prefer to use a contractor that they have used previously. It is unlikely that ComEd's promotion of this program was a significant factor in customer's calling any specific independent participating contractors.

A decision was made to sunset CACES at the end of the 2011 cooling season, despite several program design changes that were made this year. These changes include cost reductions agreed to with the implementation contractor, increased scrutiny about ensuring positive energy savings for each paid incentive, and bringing all marketing activities in-house.

Key Activities for Plan Year 4

As previously stated the CACES program was planned to be terminated at the end of the 2011 cooling season.

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. Nearly 73,000 customers are currently participating.

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.

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.

Plan Year 3 Activity

Table II-11 compares Navigant’s ex post estimates of savings with ComEd’s initial goal and its ex ante estimate of MW saved.

Table II-11

Program Results	ComEd Planning Goal (MW)	ComEd Estimated <i>Ex Ante</i> Savings (MW)	Navigant Verified <i>Ex Post</i> Savings (MW)	Pct. of Goal
Central Air Conditioning Cycling	10.0	14.7	14.7	147%

Key Accomplishments

- Added 10,180 new eligible participants
- Achieved 14.7 MW of demand response, exceeding the plan goal by 4.7 MW, or 47 percent

Key Challenges in Plan Year 3

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.

Key Activities for Plan Year 4

ComEd will not continue this program under Rider EDA to meet statutory requirements, but will still offer it as a regular ComEd offering with limited promotion.

Home Energy Report

ComEd extended its PY2 pilot behavioral based program with OPOWER, with the original target group. As this program is expanded into a full-scale program in PY4, its name has officially become Home Energy Report. The purpose of this program is to target a segment of residential users and provide a comparison of their energy usage and the usage of similar customers. Targeted customers receive mailings with statistics on their usage, the comparison with similar “neighbors”, and useful hints regarding energy efficiency. Participants in this program are selected randomly from a larger group of customers who are high electric energy users.

Given the general demographics of the target group, a control group must be chosen for comparison purposes. This control group receives no additional energy efficiency information and the savings associated with the target group is determined with a billing analysis comparison between this year and last year (or comparable usage periods) and the changes in the control group to address temporal effects such as weather and the economy.

Plan Year 3 Activity

As stated, the Home Energy report continued the pilot program from PY2. The pilot was looking to understand differences between high and low usage customers and effect of using different frequencies of supplying reports. For PY3, that same customer base was used, but all customers received reports with the same frequency. After adding customers in Fall 2010 to restore program size to near 50,000, ComEd did not try to replace customers who subsequently dropped from the program. PY3 results are shown in Table II-12.

Table II-12

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated <i>Ex Ante</i> Savings (MWh)	Navigant Verified <i>Ex Post</i> Savings (MWh)	Pct. of Goal
Home Energy Report	NA	9,600	13,479	NA

Key Accomplishments

- Program confirmed that higher use customers can generate more savings on kWh and percentage basis than lower usage customers. On a kWh basis, the high use customer's savings were more than twice the low use customers.
- Only 50 participants opted out of the program during PY3
- During their second year in the program, customers increased percentage savings compared to year one.

Key Challenges in Plan Year 3

The key challenges were developing and negotiating the expansion of the program for PY4.

The program budget was mainly to ramp up size from 50,000 to 250,000 and make sure lessons learned during PY2 & PY3 were incorporated. Based on total budget expended for PY3 which included PY4 developmental costs of \$1.6 million, the TRC was calculated at 0.39, but if

calculated on the incremental operational basis for PY3, it is 1.61. ComEd does not expect TRC to be an issue going forward as annual costs will become more consistent.

Key Activities for Plan Year 4

ComEd will expand this program to 250,000 participating customers. Over 200,000 will be new to the program and will likely require more call center support than in PY3. ComEd will be working to improve messaging in the reports sent to customers to better highlight their savings potential.

III. Smart Ideas for Your BusinessSM

Smart Ideas for Your BusinessSM is comprised of a diverse number of incentives and delivery channels to ensure relevance and reach among our different business customer segments. The business portfolio achieved 237,158 MWh of net energy savings in PY3, corresponding to 86% of its goal.

As in PY2, 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 PY3. 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. Within the Prescriptive Program, ComEd launched a mid-stream C&I lighting pilot. This pilot provided incentives for energy efficient products (CFLs initially) through electrical distributors. In PY4, this will become its own program and may expand its incented measures beyond CFLs.

The Retro-Commissioning Program continues building on its PY2 start, and added some industrial elements – largely compressed air systems. It is intended to launch compressed air systems as its own program in PY4, mainly due to different delivery channels, (e.g., service providers dealing directly with customers). C&I New Construction has continued to grow by adding longer term, comprehensive projects to its pipeline.

Prescriptive and Custom Incentives

Program Description

ComEd provided business customers with incentive offerings through the *Smart Ideas for Your BusinessSM* 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. A new track was included in the Prescriptive program for PY3, Mid-stream C&I Lighting.

ComEd's Custom incentive offering targeted commercial and industrial projects that included manufacturing process improvements or complex measures for which deemed savings or standardized 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 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 3 Activity

The Prescriptive and Custom program incentive budgets are combined to better manage funding and marketing. Incentives are subject to annual limits or

***Program Satisfaction Metrics
(Pct. Satisfied)***

- *Overall Customer Satisfaction – 95%*
- *Satisfaction w/Measures Offered - 86%*
- *Satisfaction w/Incentive Amount – 85%*

caps that are set per facility premise per year, and these were modified for PY3. Higher “bonus” incentives for select lighting measures were offered between October 25, 2010 and April 30, 2011 to encourage conversion of T12 fluorescent lighting and to increase participation for new T8 or T5 fluorescent fixtures and occupancy sensors. Bonus incentives for trade allies were

offered for a limited time in PY3 for submission of projects on a larger scale. Unlike previous years, no Prescriptive projects were wait-listed in PY3.

In the second half of PY3, ComEd expanded its offering for Prescriptive variable speed drives by adding a new application form providing incentives for HVAC pumps, fans, and chillers, process pumps and fans, compressed air, and “other” fans and pumps. As part of annual updates to forms, new forms were added for outdoor lighting, food service measures, and sensors and controls. ComEd increased its infrastructure for handling Prescriptive/Custom projects as completed projects rose from 2,079 in PY2 to 4,407 in PY3.

Table III-1 describes key program metrics, including the number of applications received and processed, incentives requested and paid, and a breakdown of types of projects (based on Ex Ante estimates).

**Table III - 1
Program Metrics**

Program Statistics	Quantity
Number of applications received	4,803
Number of applications completed	4,407
Amount of Incentives Paid	\$23M
Total Cost of Projects Supported	\$140M
CFL Bulbs Distributed	5,102
Pct. Prescriptive Projects <i>(by MWh)</i>	82%
Pct. Custom Projects <i>(by MWh)</i>	18%
Pct. Lighting Projects <i>(by MWh)</i>	75%
Pct. Custom Projects <i>(by MWh)</i>	11%
Pct. VSD Projects <i>(by MWh)</i>	11%
Pct. HVAC Projects <i>(by MWh)</i>	1%
Pct. Other Projects <i>(by MWh)</i>	2%

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

Table III-2

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated Ex Ante Savings (MWh)	Navigant Verified Ex Post Savings (MWh)	Pct. of Goal
Prescriptive	167,613	180,870	188,463	112%
Mid-Stream C&I Lighting	NA	864	916	NA
Custom	95,244	38,889	26,434	28%
Combined Prescriptive and Custom	262,857	220,623	215,813	82%

Key Accomplishments

- Incentives were provided for 4,407 projects
- More than 400 product and service providers signed up to become trade allies and received training on the program’s rules and regulations
- Conducted instructor-led training meetings and webinars for basic program training and covering special topics
 - The \$23M in incentives led to business investing over \$140M in energy efficiency projects.
- Developed new program structure for mid-stream incentives on C&I equipment typically sold through Distributors

Key Challenges in Plan Year 3

The key challenge for the Prescriptive and Custom programs was the need to grow the programs. Although ComEd has established a fairly large trade ally network, a growing share of projects were implemented without contractor support. These projects, without contractor support, also contributed to the average net savings size of projects dropping from 100,602 MWh/project to 48,763 MWh/project. Since each project often requires nearly the same amount of implementer administrative effort, average program costs (\$/kWh) were higher.

A second challenge area came from evaluation results, especially for the Custom Program. Often contractors were telling customers that they would qualify for certain level of incentives from ComEd programs, but were disappointed when program implementers evaluated their projects. Due to guidelines provided by our independent evaluators, projects could be deemed to be ineligible due to their equipment age compared to an Estimated Useful Life (EUL) established for their type of equipment. There were also cases where commercial efficiency guidelines were extrapolated to industrial applications, which resulted in lower savings estimates than original engineering review had calculated. In these cases, potential savings were eliminated and realization rates are lowered for the program. The longer term effect is to reject projects which offer real savings but may be declared ineligible. To utilities and customers, this represents lost opportunity if the customer continues operating its old equipment. These issues were also discussed in Section 1 of this report.

One other evaluation challenge was the result of final Net-to-Gross (NTG) evaluations. The NTG values were down from PY2, especially the Custom Program which dropped from 0.76 to 0.56. This drop of 0.20 represents nearly 9,500 MWh of savings and was unexpected since program processes were essentially the same. On an individual program basis, this NTG adversely affected the Custom TRC value, which was calculated at 0.99 for PY3. ComEd does not believe this is representative of future program performance, and will work to improve its screening of projects.

Developing the mid-stream incentive track had one interesting challenge – properly incenting distributor sales force to promote the program. The concept was simple – provide incentives at the distributor level to drop prices for bulbs. Many C&I customers purchase small equipment and supplies through distributors, and if the distributor's sales force promoted CFLs versus

incandescents, the savings potential is straightforward. However, the initial structure decreased bulb prices, which reduced sales commissions and disincented the sales force from promoting program bulbs. Bulb sales in PY3 were quite disappointing.

Key Activities for Plan Year 4

ComEd will focus on strategies designed to boost non-lighting-related energy efficiency projects and the Custom incentive offering for PY4. Additional effort will be made to increase outreach to new customers either through the existing ComEd trade ally network or via other market actors. Specifics 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, and more aggressive marketing tactics for both trade allies and customers will be needed to meet PY4 volumes. Other channels for customer acquisition are being examined
- Launched an advertising campaign to expand awareness of *Smart Ideas for Your Business*
- Evaluate quality standards and programs to recognize and reward trade allies who provide the highest levels of customer service to our business customers
- Offer 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-categorize many specialty lighting technologies and other measures from Custom to Prescriptive to make customer applications easier and 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

- Explore other channels for customer acquisition, such as firms with a strong network of ties to a particular customer segment
- ComEd has contracted for a program manager to develop the mid-stream incentives into a stand alone program, with initial focus on CFLs

Commercial & Industrial Retro-Commissioning

Program Description

Retro-commissioning completed 34 projects in PY3 for a total net savings of 15,373 MWh. This compares to the PY2 initial year results of 13 projects and 6,574 MWh. This program was designed to improve the efficiency of the buildings' energy systems with low and no cost operational measures.

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 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. In PY3, the program reached out to industrial customers and included a monitoring-based commissioning pilot.

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.

Plan Year 3 Activity

The program exceeded its PY3 goal of 10,903 MWh of energy savings with 34 participants including: commercial office buildings, data centers, hotels, hospitals, large retail stores, and industrial customers.

Table III-3 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 <i>Ex Ante</i> Savings (MWh)	Navigant Verified <i>Ex Post</i> Savings (MWh)	Pct. of Goal
Retro-commissioning	10,903	19,376	15,382	141%

Key Accomplishments

- Completed 34 projects in PY3 and 45 projects were accepted for PY4
- Nexant continued to identify and train Retrocommissioning Service Providers (RSP); 7 submitted commercial projects for PY3; another 2 specialized in compressed air systems
- Four compressed air systems were implemented in PY3
- Nexant led development of case studies to enhance marketing efforts

Key Challenges in Plan Year 3

A typical retro-commissioning project can take up to 2 years. Managing projects within a single year program cycle continues to be a challenge. A pipeline has been started to recognize project completions in future years, but expenses are recognized when they occur.

As previously indicated, program offerings were expanded to primarily include compressed air systems and 2 pilot projects were attempted under different program approaches for monitoring-based commissioning. Additionally, ComEd began working with Nicor gas company on adding gas measures to be recommended in a joint program. In PY3, the Retro-commissioning program was evaluated as creating savings of 343,937 therms.

A potential challenge going forward was the disappointing NTG value determined for PY3. Retro-commissioning is a program with considerable customer contact, and an approach to adopt low cost options. The PY3 NTG was 0.71, compared to a PY2 NTG of 0.92. The primary explanation for the increase in free-ridership was the customer already knew about the needed fixes and planned to do it in the near future. Since the program does not provide incentives for the measures themselves, only the engineering study to identify them, it is questionable that the customer would have installed these measures since they had not already. ComEd does not believe this NTG ratio is representative of the program, but will monitor it going forward.

Key Activities for Program Year 4

Additional measures are being developed for PY4 and compressed air system services will be offered in a separate program which focuses more on industrial customers. Like all retro-commissioning projects, the new industrial measures will focus on the operation and optimization of existing systems but with some potential 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. New types of customer outreach will be examined.

Commercial & Industrial New Construction

Program Description

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 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 technical assistance; whole building energy modeling 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 offers three project tracks. 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 offers fixed incentives for improving lighting and HVAC systems. A ‘comprehensive track’ offers the highest level of technical assistance and financial incentives to address building design, resulting in a holistic, integrated and efficient building design. The comprehensive option is most effective when the New Construction team is involved very early in the building design process. A third track for the commercial new construction of small buildings offers assistance and incentives for improved lighting and daylighting features.

Plan Year 3 Activity

The program exceeded its PY3 goal of 1,908 MWh of energy savings with verified savings of 5,963 MWh from thirty-seven participants. In PY3 savings were generated from 31 projects on the “systems track” and 6 projects on the “comprehensive track”. In PY3, 80 applications were submitted, of which 70 were accepted, and 35 completed within the program year. Given the typical long development time, the approved applications not completed in PY3 are scheduled to be completed in PY4 and later. This program hopes to shift participation from the systems track to the comprehensive track, which is starting to happen.

**Table III - 4
Program Metrics**

Program Statistics	Quantity
Number of applications received	80
Number of applications approved	70
Number of applications completed	35
Amount of Incentives Paid	\$636,446
Building area affected (Sq. ft. 1000's)	4,772

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

Table III - 5

Program Results	ComEd Planning Goal (MWh)	ComEd Estimated <i>Ex Ante</i> ¹ Savings (MWh)	Navigant Verified <i>Ex Post</i> ² Savings (MWh)	Pct. of Goal
New Construction	1,908	6,258	5,963	313%

Key Accomplishments

- 37 projects completed in PY3
- Lighting, HVAC, Daylighting, and some industrial process measures were implemented
- A good geographic distribution within the service territory
- Six training seminars were conducted by ECW to promote energy efficiency topics

Key Challenges in Plan Year 3

Economic uncertainty continues to impact new construction throughout the region. Additionally, we faced the challenge of raising the design community’s awareness of the program and its services. During PY3, the implementation team worked to raise awareness with training and education specifically targeted at the design community. The longer-term comprehensive services were emphasized and projects were accepted with future in-service dates reflecting normal design timeframes for new construction projects.

As in other programs, ComEd started to coordinate efforts with the gas companies to have joint programs going forward. In the near term, the joint program will only be with Nicor.

Key Activities for Program Year 4

- 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.
- Full coordination as a joint program with Nicor

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 3 Activity

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

**Table III-6
Program Metrics**

Program Statistics	Total
New Enrollments	625
Total Enrollments (PY1-PY3)	3,540
Increase of Enrollments	21%

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

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 the energy efficiency plan, 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.

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 3 Activity

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

Table III-7

Program Statistic	Total
New Building Enrollments	103
Total Building Enrollments (PY1-PY3)	1,447

IV. R&D / Emerging Technologies

ComEd is allowed to spend up to 3 percent of its portfolio budget on R&D / emerging technologies. For PY3, ComEd allocated \$2.0 million for these initiatives and spent \$1.4 million. The primary activities for PY3 were the testing of four program concepts – the OPOWER Home Energy Reports Pilot, Sears ENERGY STAR[®] Clothes Washer Pilot, Small C&I Direct Install Pilot and Monitoring Based Commissioning (MBCx) Pilot. Savings from the OPOWER Home Energy reports and portions of MBCx were included in PY3 results, but savings from the Clothes Washer and Small C&I Direct Install pilots were not evaluated by Navigant. All programs except for Monitoring Based Commissioning (MBCx) will be stand alone programs in PY4. ComEd may examine different program designs for MBCx to determine its viability.

Small C&I Direct Install Program

Program Description

This pilot program was intended to demonstrate the effectiveness of C&I direct install programs. This pilot was larger and more complex than our typical pilot. ComEd evaluated multiple delivery approaches and determined the appropriate mix of energy efficiency measures that will maximize energy savings. The pilot was conducted in multiple geographical locations. Working with community based organizations and civic groups played an important role as a program design element. Customers with electric demand under 100kW were targeted.

For PY3 ComEd developed its program structure into Nicor Gas and Integrys Gas joint pilots. ComEd was the main implementer of this program, but used different implementers in the Nicor and Integrys service territories, another difference from our other 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 3 (June 1, 2010 through May 31, 2011), the *Smart Ideas* portfolio achieved 626,715 MWh in energy savings, exceeding its statutory goal of 458,919 MWh by 37%. Over the three-year plan period, ComEd has increased incremental annual energy savings by over 1,200,000 MWh with total customer savings estimated at over 2,000,000 MWh.

At the end of its initial three-year plan, the *Smart Ideas* portfolio has put ComEd customers on track to save more than \$200 million in energy costs versus the Rider EDA charges of \$155 million. ComEd customers will continue to save money over the lifetimes of their energy efficiency measures.

As a result of lessons learned during Plan Year 3, ComEd is well positioned to develop more innovative energy efficiency initiatives and achieve more aggressive energy savings goals in future years. ComEd has also effectively partnered with the gas companies in its service territory, which opens more opportunities for energy efficiency.

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 PY3, DCEO's statutory portfolio goal for the ComEd service territory was 125,158 MWhs. The results for DCEO are provided below.

DCEO - ComEd Territory PY3 Energy Efficiency Programs	Plan MWH Savings	Navigant Reported Results (Ex Post)	
		MWH Savings	Pct. Of Plan
Low Income			
Low Income Residential Retrofit	1,114	7,438	668%
Public Housing Authority Efficient Living	1,294	776	60%
Energy Efficient Affordable Housing Construction	1,346	1,221	91%
Total Residential	3,754	9,435	251%
Public Sector			
Lights for Learning	5,180	633	12%
Building Operator Certification	-	6,830	NA
Prescriptive Incentives	95,153	29,017	30%
Custom Incentives	14,773	6,703	45%
New Construction	2,070	269	13%
Retro-Commissioning	4,491	1,243	28%
Total C&I	121,667	44,695	37%
Total DCEO Portfolio - ComEd	125,421	54,130	43%
Statutory Goal*	125,158	54,130	43%

* DCEO allocation of total goal

ComEd is responsible for administering funds, received from ComEd ratepayers, for the DCEO energy efficiency projects completed within the ComEd Service Territory. For PY3, DCEO submitted funding requests for \$28.7M of their spending screen budget of \$29.3M

VII. Data Tables

Table VII-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 VII-1

	ComEd Target MWH Savings	ComEd Reported Results (Ex Ante)		Navigant Results (Ex Post)	
		MWH Savings	Pct. Of Plan	MWH Savings	Pct. Of Plan
Residential					
Residential Lighting	149,322	232,975	156%	264,631	177%
Appliance Recycling	24,477	33,093	135%	44,851	183%
Multi-family All-electric Sweep	2,369	8,708	368%	10,671	450%
Single Family Home Performance	2,473	2,006	81%	2,499	101%
CACES	22,528	2,164	10%	2,225	10%
Home Energy Report		9,600		13,479	
Total Residential	201,169	288,546	143%	338,356	168%
C&I					
C&I Prescriptive	262,857	181,734	84%	189,379	82%
C&I Custom		38,889		26,434	
C&I Retrocommissioning	10,903	19,376	178%	15,382	141%
C&I New Construction	1,908	6,258	328%	5,963	313%
Total C&I	275,668	246,257	89%	237,158	86%
PY3 Program Totals	476,837	534,803	112%	575,514	121%
CFL Carryover					
PY1		15,981		15,981	
PY2		32,996		35,220	
Portfolio Totals (with CFL Carryover)	476,837	583,780	122%	626,715	131%
Statutory Goal	458,919	583,780	127%	626,715	137%

Table VII-2 shows ComEd's potential and actual savings banked for PY1 – PY3. These savings are available for use in future Program Years to meet Statutory Requirements.

Table VII-2

Plan Year	Potential Banking (10% limit)	Actual Banking	Cumulative Banked
PY1	18,874	0	0
PY2	39,369	39,369	39,369
PY3	58,408	58,408	97,777
Total	116,651	97,777	97,777

Table VII-3 shows the comparison of the Plan budget versus Actual expenditures for PY3 for Rider EDA expenses. It should be noted that ComEd incurred additional internal labor costs that are not included as Rider EDA expenses.

Table VII-3

	Planned Budget *	Actual Expenditures
RESIDENTIAL EE PROGRAM COSTS		
Residential Lighting	\$ 14,200,000	\$ 15,380,932
Appliance Recycling	\$ 5,484,000	\$ 5,945,189
Multi-family All-electric Sweep	\$ 1,523,900	\$ 2,201,435
Single Family Home Performance	\$ 591,300	\$ 1,272,882
CACES	\$ 13,100,000	\$ 676,934
Home Energy Report		\$ 1,642,308
Total Residential Programs	\$ 34,899,200	\$ 27,119,680
C&I EE PROGRAM COSTS		
C&I Prescriptive	\$ 33,000,000	\$ 27,121,247
C&I Custom	\$ 4,905,700	\$ 3,487,765
C&I Retrocommissioning	\$ 4,090,000	\$ 3,192,735
C&I New Construction	\$ 1,550,000	\$ 1,307,184
Total C&I Programs	\$ 43,545,700	\$ 35,108,931
OTHER COSTS		
Demand Response	\$ 950,000	\$ 1,083,330
DCEO	\$ 29,270,117	\$ 28,659,011
R&D / Emerging Technologies	\$ 1,982,500	\$ 1,387,102
M&V	\$ 3,621,000	\$ 3,621,029
Educational/ Outreach/ EIO Energy Star	\$ 2,205,000	\$ 2,957,997
Other Portfolio Costs	\$ 4,227,434	\$ 4,349,045
Total Other	\$ 42,256,051	\$ 42,057,514
Total Portfolio Costs	\$ 120,700,951	\$ 104,286,124

* Plan Budget adjusted to Spending Screen PY3 as filed in PY3 Rate filing.

Table VII-4 shows the breakdown of PY3 by contractor, incentive, marketing and labor costs across the programs.

**Table VII-4
PY3 Rider Portfolio Expenses**

	Rider EDA Expenses					TOTAL Rider EDA Expenses f	ComEd Labor Non- Rider EDA Expense ⁽²⁾ g	Total Portfolio Expenses h
	Contractor Costs	Incentive Costs	Marketing/Other Costs	TOTAL Non-Labor Costs	ComEd Labor ⁽²⁾			
	a	b	c	b	e			
			a+b+c		d+e		g+i	
RESIDENTIAL EE PROGRAM COSTS								
Residential Lighting	\$ 2,457,854	\$ 12,710,832	\$ 212,246	\$ 15,380,932	\$ 200,205	\$ 15,581,137	\$ 25,001	\$ 15,606,138
Appliance Recycling	\$ 3,671,301	\$ 1,248,175	\$ 1,025,713	\$ 5,945,189	\$ 126,535	\$ 6,071,724	\$ 138,235	\$ 6,209,959
Multi-family All-electric Sweep	\$ 335,961	\$ 917,816	\$ 19,105	\$ 1,272,882	\$ 124,519	\$ 1,397,402	\$ 10,411	\$ 1,407,813
Single Family Home Performance	\$ 390,934	\$ 246,702	\$ 39,299	\$ 676,934	\$ 149,144	\$ 826,078	\$ 8,335	\$ 834,413
CACES	\$ 610,943	\$ 1,330,172	\$ 260,320	\$ 2,201,435	\$ 26,133	\$ 2,227,568	\$ 137,475	\$ 2,365,043
Home Energy Report	\$ 1,642,308	\$ -	\$ -	\$ 1,642,308	\$ 106,802	\$ 1,749,110	\$ 8,391	\$ 1,757,501
Total Residential Programs	\$ 9,109,302	\$ 16,453,697	\$ 1,556,682	\$ 27,119,680	\$ 733,338	\$ 27,853,019	\$ 327,848	\$ 28,180,867
C&I EE PROGRAM COSTS								
C&I Prescriptive	\$ 6,322,449	\$ 20,178,985	\$ 619,813	\$ 27,121,247	\$ 263,731	\$ 27,384,977	\$ 86,360	\$ 27,471,337
C&I Custom	\$ 454,605	\$ 2,878,922	\$ 154,239	\$ 3,487,765	\$ 56,214	\$ 3,543,980	\$ 19,153	\$ 3,563,133
C&I Retrocommissioning	\$ 785,825	\$ 2,344,638	\$ 62,272	\$ 3,192,735	\$ 240,327	\$ 3,433,062	\$ 8,391	\$ 3,441,453
C&I New Construction	\$ 668,764	\$ 636,446	\$ 1,974	\$ 1,307,184	\$ 95,520	\$ 1,402,704	\$ -	\$ 1,402,704
Total C&I Programs	\$ 8,231,642	\$ 26,038,991	\$ 838,298	\$ 35,108,931	\$ 655,792	\$ 35,764,723	\$ 113,904	\$ 35,878,627
DEMAND RESPONSE COSTS								
Central AC Cycling ¹	\$ -	\$ 372,163	\$ 711,166	\$ 1,083,330	\$ -	\$ 1,083,330	\$ 18,858	\$ 1,102,188
DCEO PROGRAM COSTS								
DCEO	\$ 28,659,011	\$ -	\$ -	\$ 28,659,011	\$ -	\$ 28,659,011	\$ -	\$ 28,659,011
OTHER PORTFOLIO COSTS								
EIO / Energy Star	\$ 267,008	\$ -	\$ 8,420	\$ 275,427	\$ -	\$ 275,427	\$ -	\$ 275,427
Educational Outreach	\$ 2,682,570	\$ -	\$ -	\$ 2,682,570	\$ -	\$ 2,682,570	\$ -	\$ 2,682,570
R&D / Emerging Technologies	\$ 1,387,102	\$ -	\$ -	\$ 1,387,102	\$ -	\$ 1,387,102	\$ -	\$ 1,387,102
Measurement & Verification	\$ 3,621,029	\$ -	\$ -	\$ 3,621,029	\$ -	\$ 3,621,029	\$ -	\$ 3,621,029
Portfolio Administration	\$ 840,060	\$ -	\$ -	\$ 840,060	\$ 2,119,855	\$ 2,959,915	\$ 1,124,766	\$ 4,084,681
Total Other	\$ 8,797,768	\$ -	\$ 8,420	\$ 8,806,188	\$ 2,119,855	\$ 10,926,043	\$ 1,124,766	\$ 12,050,809
Total Portfolio Costs	\$ 54,797,723	\$ 42,864,851	\$ 3,114,567	\$ 100,777,140	\$ 3,508,985	\$ 104,286,124	\$ 1,585,376	\$ 105,871,502
Total Portfolio Costs w/o DCEO	\$ 26,138,712	\$ 42,864,851	\$ 3,114,567	\$ 72,118,129	\$ 3,508,985	\$ 75,627,113	\$ 1,585,376.00	\$ 77,212,491

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

2) ComEd labor has been allocated to programs based on participation surveys

VIII. ComEd Differences with PY3 Evaluation Reports

In the course of reviewing evaluation reports, ComEd has found areas where it disagreed with the results and 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.

All Electric Efficiency Upgrade

This is a multi-family direct install program which provides CFLs and water savings aerators and showerheads for multi-family units with electric water heating. Many of these apartments are retrofitted with the help of building management providing access. Water measure savings are dependent on the percent of water sources retrofitted and occupancy of the unit. The base savings assumption was based on census average, but evaluation modified it based on phone surveys from 70 of the 5500 units upgraded. In PY2, the evaluator performed a similar survey which seemed incomplete due to exclusions and questionable responses.

In PY3, the survey results seem more reasonable, but still lacks the expected confidence level. The survey statistics were not provided, but the error of margin was given as greater than 11%. In many of these cases with rental properties, ComEd feels there could be an inclination to understate occupancy through phone surveys. ComEd's intent is to survey occupancy when residents are present during measure installation in PY4 to determine better estimates for occupancy.

Net-to-Gross Determination

As with many evaluated programs across the country, ComEd feels that free-ridership is often overstated. The determination of free-ridership is a very inexact science. High free-ridership in turn results in lower Net-to-Gross (NTG) ratios and lower verified savings. The PY3 evaluations for the C&I Custom and Retro-commissioning program both dropped considerably from PY2 evaluations, and ComEd does not believe they are representative of their respective programs. In both of these programs, ComEd and its implementers work closely with its customers throughout the application and implementation process. Yet ComEd was surprised by the final evaluation results.

For the Custom Program, the NTG ratio dropped from 0.76 to 0.56 from PY2 to PY3. The low NTG was highly influenced by surveys from the 2 largest projects in the sample. Although ComEd was surprised that these customers indicated the Custom Program had little influence on their energy efficiency projects, the final results could be attributed to bad year for samples and possibly lax screening in applications. ComEd plans to screen more intently for free-ridership, but will not deem this NTG result for our PY5 program.

The drop in the Retro-commissioning (RCx) program from 0.92 to 0.71 was more perplexing. The RCx Program provides engineering evaluation to improve existing systems. An underlying aspect is that measures are more process based versus equipment replacements. Because of this, the program typically has low customer implementation costs and ComEd does not provide any equipment incentives. The free-rider assertion was that most customers were already aware of performance issues

and half were aware of all recommended solutions. Customers also indicated they were planning on implementing these solutions in the near future. These resulted in lower influence scores for the program, i.e. higher free-ridership.

ComEd's view is that many recommendations were for system optimization and scheduling, which require monitoring and analyzing weeks of data trending. Although performance issues may have been recognized, project commitments weren't happening until the program succinctly identified problems and specific solutions to correct them. The Program's engineering studies should result in a much larger program influence than is being captured through the NTG surveys. From a logic viewpoint, it is difficult to believe that companies would not implement identified, low-cost measures sooner than later (payback for RCx projects typically less than 18 months which should produce a good ROI), and they would also "waste" their time coordinating with outside contractors examining problems they already knew about and knew how to fix.

The evaluator experienced difficulty in conducting surveys in PY3, as only 8 of 34 customers would partake in the requested interviews. Based on this low response and ComEd's view of the program described above, ComEd does not feel the PY3 RCx NTG result is representative of the program on a going forward basis, and will not deem this value for PY5.