



CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

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Electricity Distributor Licence ED-2002-0574

Conservation and Demand Management

2013 ANNUAL REPORT

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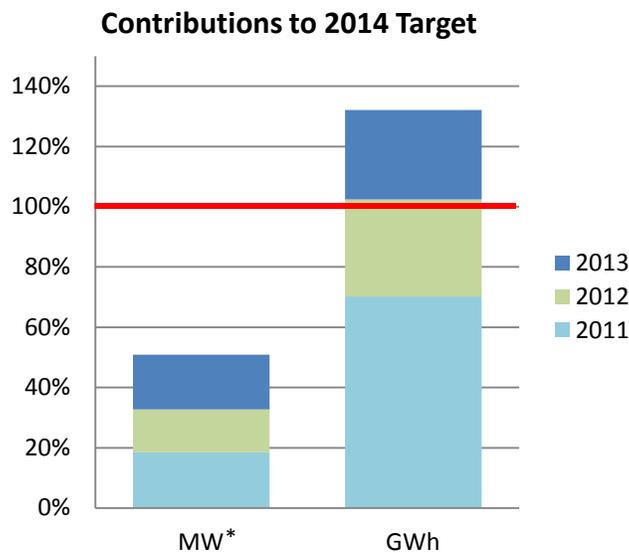
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Executive Summary

2013 represented the third of four years of Conservation and Demand Management (CDM) program delivery under the new Ontario Energy Board (OEB) CDM Code (Board File No. EB-2010-2015). The CDM Code requires that Cambridge and North Dumfries Hydro Inc. (CND) achieve a mandated 17.68 MW and 73.66 GWh of peak demand and energy savings during the period of January 1, 2011 until December 31, 2014. This report will provide details on the achievement to date, including activities undertaken to increase participation rates. The 2011, 2012 & 2013 cumulative achievements toward the 2014 target are summarized in the chart below.



CND is pleased to report that their GWh energy reduction target for 2014 was achieved in 2012 and contributions from 2013 further exceeded target. As with many other Local Distribution Companies (LDCs) the demand target (MW) continues to be a challenge to achieve. A diminished suite of programs, delayed launches and reduced financial reward for demand response have led to a decrease in MW savings. In an ongoing effort to propel CND towards their MW target, heavier emphasis and allocation of resources is being placed on programs that yield a high return on peak demand savings.

Based on a successful collaborative model in past years, CND continued to strengthen a shared delivery model with its neighbouring LDCs Kitchener-Wilmot Hydro and Waterloo North Hydro. The joint approach has proven to reduce market confusion, increase cost-effectiveness and strengthen the saveONenergy brand in the Waterloo Region. Additionally, where appropriate, CND aligned their strategy with other key stakeholders such as municipalities, gas utilities and third party delivery agents.

Background

On March 31, 2010, the Minister of Energy and Infrastructure of Ontario, under the guidance of sections 27.1 and 27.2 of the *Ontario Energy Board Act, 1998*, directed the OEB to establish CDM targets to be met by electricity distributors. Accordingly, on November 12, 2010, the OEB amended the distribution license of CNL to require CNL, as a condition of its license, to achieve 73.66 GWh of energy savings and 17.68 MW of summer peak demand savings, over the period beginning January 1, 2011 through December 31, 2014.

In accordance with the same Minister's directive, the OEB issued the Conservation and Demand Management Code for Electricity Distributors (the Code) on September 16, 2010. The Code sets out the obligations and requirements with which electricity distributors must comply in relation to the CDM targets set out in their licenses. To comply with the Code requirements, CNL submitted its CDM Strategy on November 1, 2010 which provided a high level of description of how CNL intended to achieve its CDM targets.

The Code also requires a distributor to file annual reports with the Board. This is the third Annual Report produced by CNL and it has been prepared in accordance with the Code requirements and covers the period from January 1, 2013 to December 31, 2013.

CNL submitted its 2012 Annual Report on September 30, 2013 which summarized the CDM activities, successes and challenges experienced by CNL for the January 1, 2012 to December 31, 2012 period. The OEB's 2011 CDM Results report identified that the delay in the full suite of CDM Programs being made available by the OPA, and the absence of some programs negatively impacted the final 2011 results for the LDCs. This issue was also highlighted in Volumes I & II of the Environmental Commissioner's Report on Ontario's Annual Energy Conservation Progress.

On December 21, 2012, the Minister of Energy directed the Ontario Power Authority (OPA) to fund CDM programs which meet the definition and criteria for OPA-Contracted Province-Wide CDM Programs for an additional one-year period from January 1, 2015 to December 31, 2015.

The Ministerial Directive did not amend the timelines for LDCs to achieve their energy savings and demand savings targets. Therefore, the main focus of the LDCs remains the achievement of CDM targets by December 31, 2014.

1 Conservation Framework

1.1 Current Framework

Ontario's current CDM framework is a key step towards creating a culture of conservation in the province. The Ministry's Directive to the OEB to establish CDM targets that would be met by electricity distributors recognizes the importance of CDM for both electricity customers and the electricity system. CDM helps customers manage rising energy costs, support Ontario's Integrated Power Systems Plan, as well as address local distribution and transmission supply constraints. The current framework was intended to enable customers to benefit from a suite of both Board-Approved and OPA Province-Wide programs and be a portfolio that would meet both broad and specific customer needs.

The state of Board-Approved programs and the current suite of Province-Wide OPA programs have limited CDM offerings to customers. This has produced limited savings and has restricted the associated opportunity for LDCs to meet their targets. The process to introduce changes to current program Initiatives or to pilot new Initiatives has been challenging, taking considerable cost and effort for LDCs, like CND, who have pursued this track.

The Ministerial Directive provides continuity of the conservation programs and associated compensation for the participants. However, the transition period in 2015 will need to come with clear guidelines on attribution and funding to avoid the stop/start the market experienced in 2011.

1.2 Future Framework

LDCs are supportive of the Minister's renewed vision for CDM in Ontario. CND is committed to working with the Ministry and other stakeholders to develop the next framework for CDM in Ontario.

2 Board-Approved CDM Programs

2.1 Introduction

In its Decision and Order dated November 12 2010 (**EB-2010-0215 & EB-2010-0216**), the OEB ordered that, (to meet its mandatory CDM targets), “Each licensed electricity distributor must, as a condition of its license, deliver Board-Approved CDM Programs, OPA-Contracted Province-Wide CDM Programs, or a combination of the two”.

At this time, the implementation of Time-of-Use (“TOU”) Pricing has been deemed as a Board-Approved CDM program that is being offered in CND’s service area.

2.2 TOU Pricing

2.2.1 Background

In its April 26, 2012 CDM Guidelines, the OEB recognizes that a portion of the aggregate electricity demand target was intended to be attributable to savings achieved through the implementation of TOU Pricing. The OEB establishes TOU prices and has made the implementation of this pricing mechanism mandatory for distributors. On this basis, the OEB has determined that distributors will not have to file a Board-Approved CDM program application regarding TOU pricing. The OEB has deemed the implementation of TOU pricing to be a Board-Approved CDM program for the purposes of achieving the CDM targets. The costs associated with the implementation of TOU pricing are recoverable through distribution rates, and not through the Global Adjustment Mechanism (GAM).

In accordance with a Directive dated March 31, 2010 by the Minister of Energy and Infrastructure, the OEB is of the view that any evaluations of savings from TOU pricing should be conducted by the OPA for the province, and then allocated to distributors. CND will report these results upon receipt from the OPA.

At the time of preparation of this report the OPA had retained The Brattle Group as the evaluation contractor and will be working with an expert panel convened to provide ongoing advice on methodology, data collection, models, savings allocation, etc. The initial evaluations were conducted in 2013 with five LDCs – Hydro One, Toronto Hydro, Hydro Ottawa, Thunder Bay Hydro and Newmarket Hydro. Preliminary results from these five LDCs were issued to the five LDCs involved in the study in August 2013 and are now publically available on the OPA website. Preliminary results demonstrated load shifting behaviours in the residential customer class.

Three additional LDCs were added to the study in 2014 – Powerstream, Sudbury and CND. Preliminary results from this study are planned to be issued to the eight LDCs in Q4 2014. The OPA advised that the TOU study will be complete in the summer of 2015 and final verified savings will be available for LDCs to include in the 2014 Annual Report.

As of September 30, 2014, the OPA has not released any verified results of TOU savings to CND. Therefore, CND is not able to provide any verified savings related to LDC's TOU program at this time.

2.2.2 TOU PROGRAM DESCRIPTION

Target Customer Type(s): Residential and small business customers (up to 250,000 kWh per year)

Initiative Frequency: Year round

Objectives: TOU pricing is designed to incent the shifting of energy usage. Therefore, peak demand reductions are expected, and energy conservation benefits may also be realized.

Description: In August of 2010, the OEB issued a final determination to mandate TOU pricing for Regulated Price Plan (RPP) customers by June 2011, in order to support the Government's expectation for 3.6 million RPP consumers to be on TOU pricing by June 2011, and to ensure that smart meters funded at ratepayer expense are being used for their intended purpose.

The RPP TOU price is adjusted twice annually by the OEB. A summary of the RPP TOU pricing is provided below:

RPP TOU	Rates (cents/kWh)			
	Effective Date	On Peak	Mid Peak	Off Peak
	November 1, 2010	9.9	8.1	5.1
	May 1, 2011	10.7	8.9	5.9
	November 1, 2011	10.8	9.2	6.2
	May 1, 2012	11.7	10.0	6.5
	November 1, 2012	11.8	9.9	6.3
	May 1, 2013	12.4	10.4	6.7
	November 1, 2013	12.9	10.9	7.2
	May 1, 2014	13.5	11.2	7.5

Delivery: The OEB set the rates; LDCs install and maintain the smart meters and convert customers to TOU billing.

Initiative Activities/Progress: CND began transitioning its RPP customers to TOU billing in April 2012. At December 31st, 2013, 100% of CND's RPP customers were on TOU billing.

2.3 CND's Application with the OEB

There were no LDC programs approved by the OEB in 2013.

In 2013 CND did not submit a CDM program application for any Board-Approved CDM programs.

OPA-Contracted Province-Wide CDM Programs

3.1 Introduction

Effective February 17, 2011, CND entered into an agreement with the OPA to deliver CDM programs extending from January 1, 2011 to December 31, 2014, which are listed in Table 1 below. Program details are included in Appendix A. In addition, results include projects started pre 2011 which were completed in 2011:

Table 1: CDM Programs

Initiative	Schedule	Date schedule posted	Customer Class
Consumer Programs			
Appliance Retirement	Schedule B-1, Exhibit D	Jan 26, 2011	All residential rate classes
Appliance Exchange	Schedule B-1, Exhibit E	Jan 26, 2011	All residential rate classes
Heating & Cooling Incentives	Schedule B-1, Exhibit B	Jan 26, 2011	All residential rate classes
Conservation Instant Coupon Booklet	Schedule B-1, Exhibit A	Jan 26, 2011	All residential rate classes
Bi-Annual Retailer Event	Schedule B-1, Exhibit C	Jan 26, 2011	All residential rate classes
Retailer Co-op	n/a	n/a	
Residential Demand Response	Schedule B-3	Aug 22, 2011	All residential and general service classes
New Construction Program	Schedule B-2	Jan 26, 2011	All residential rate classes
Commercial & Institutional Programs			
Efficiency: Equipment Replacement Initiative	Schedule C-2	Jan 26, 2011	All general service classes
Direct Install Lighting Initiative	Schedule C-3	Jan 26, 2011	General Service < 50 kW
Existing Building Commissioning Incentive	Schedule C-6	Feb 2011	All general service classes
New Construction and Major Renovation Initiative	Schedule C-4	Feb 2011	All general service classes
Energy Audit Initiative	Schedule C-1	Jan 26, 2011	All general service classes
Industrial Programs			
Process & System Upgrades	Schedule D-1	May 31, 2011	GS 50 kW & above
Monitoring & Targeting	Schedule D-2	May 31, 2011	GS 50 kW & above
Energy Manager	Schedule D-3	May 31, 2011	GS 50 kW & above
Key Account Manager ("KAM")	Schedule D-4	May 31, 2011	GS 50 kW & above

Demand Response 3	Schedule D-6	May 31, 2011	General Service 50 kW & above
Home Assistance Program			
Home Assistance Program	Schedule E-1	May 9, 2011	All residential rate classes
Pre-2011 Programs			
Electricity Retrofit Incentive Program	n/a	n/a	All general service classes
High Performance New Construction	n/a	n/a	All general service classes

Table 2 outlines previous Initiatives from the OPA-Contracted Province Wide program portfolio that have been removed from the Schedule or have not been released to market as of December 31, 2013.

Table 2: CDM Programs Not in Market

Initiative Not in Market in 2013	Objective	Status
Consumer Programs		
Midstream Electronics	The objective of this initiative is to encourage retailers to promote and sell high efficiency televisions, and for distributors to distribute high efficiency set top boxes.	Not launched to market Removed from Schedule in Q2, 2013.
Midstream Pool Equipment	The objective of this Initiative is to encourage pool installers to sell and install efficient pool pump equipment in residential in-ground pools.	Not launched to market Removed from Schedule in Q2, 2013.
Aboriginal Conservation Program	First Nations programs are delivered by the OPA and results are attributed to LDCs for reporting.	Launched in 2013 by OPA.
Home Energy Audit Tool	This is a provincial online audit tool to engage customers in conservation and help drive customer participation to CDM programs.	Not launched to market Removed from Schedule in Q2, 2013.
Commercial & Institutional Programs		
Direct Service Space Cooling	The objective of this Initiative is to offer free servicing of ACs and refrigeration units for the purpose of achieving energy and demand savings	Not launched to market
Industrial Programs		
DR1	This Initiative allows distribution customers to voluntarily reduce electricity demand during certain periods of the year pursuant to the	No customer uptake for this Initiative. As a result this Initiative was removed from the Schedule in Q4, 2012.

DR1 contract. The Initiative provides DR payment for service for the actual electricity reduction provided during a demand response event.
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The Master CDM Program Agreement includes program change management provision in Article 3. Collaboration between the OPA and the LDCs commenced in 2011, and continued in 2012 and 2013, as the change management process was implemented to enhance the OPA-Contracted Province Wide programs. The change management process allows for modifications to the Master Service Agreement and Initiative Schedules. The program enhancements give LDCs additional tools and greater flexibility to deliver programs in a way that meets the needs of customers and further drives participation in the Initiatives.

3.2 Program Descriptions

Full OPA-Contracted Province-Wide CDM Program descriptions are available on the OPA's [saveonenergy](https://saveonenergy.ca) website at <https://saveonenergy.ca>. The targeted customer types, objectives, and individual descriptions for each Program Initiative are detailed in Appendix A.

3.2.1 CONSUMER PROGRAMS

Description: Provides residential customers with programs and tools to help them understand and manage the amount of energy they use throughout their entire home and help the environment.

Objective: To provide incentives to both existing homeowners and market channels to motivate the installation of energy efficiency measures in both existing and new home construction.

Discussion: The addition of LED measures to the Bi-Annual Retailer Event and in the Annual Coupon initiative in July 2013 has had a positive impact on customer participation. There was the added benefit of three LDC custom coded coupon options for LDCs to utilize in 2013.

Province-wide advertising was re-introduced in Q3 2013. This provided limited value due to the late market entry.

Work to revitalize and increase the effectiveness and breadth of the Initiatives in the Consumer Program Portfolio continues to be of highest priority. Opportunities within the Residential marketplace need to be identified, developed and offered to customers. The Version 5 Schedule changes implemented in Q1/Q2 2014 have increased the number of LDC coded coupons available and added new installations to the Heating and Cooling Incentive.

Program Activities Undertaken: Co-promotion and co-branding techniques are frequently used in the Consumer programs to maintain cost-effectiveness and increase overall brand awareness. Collaboration with Kitchener-Wilmot Hydro and Waterloo North Hydro on creative, printing and publishing has been effective in reaching a wider audience with consistent messaging while achieving cost-savings.

CND made consumer engagement a priority again in 2013 with the hiring of a full time Energy Efficiency Advisor to oversee and improve program delivery. The following bulleted list provides an overview of the program activities undertaken for the Consumer programs in 2013.

- Print materials such as posters, banners, brochures, bill inserts have been utilized at community events, City of Cambridge office, CND office and elsewhere.
- The commercials were shown as pre-roll footage 0-10 minutes before films at the local Cambridge Cineplex.
- Advertising with the Cambridge Times included newsprint, special edition magazines, newspaper inserts and online advertisements.

- Advertising with The Record included newsprint, special edition magazines and online advertisements.
- Sponsorship for the 2012/2013 and 2013/2014 season of the Ontario Hockey League Kitchener Rangers included commercial airplay on the scoreboard screen, game night sponsorship and concourse signage for the season.
- Advertising with the Cambridge Centre Mall included mall posters.
- Community events sponsorship included; ecoFest, Sustainability in the Park, Grand River Film Festival, Fresh Ayr Festival and Christmas in Cambridge.
- Advertising with SNAP Cambridge included newsprint and event coverage.
- Advertising with The Weather Network included online website ads and mobile smart phone application ads.
- Advertising buy with Rogers Radio Group in the Waterloo Region included a variety of promotions for Consumer and Business Initiatives depending on the season and focus.
- Commercial videos were posted to a youtube.com channel and have received more than 50,000 views to date combined.

3.2.1.1 Appliance Retirement Initiative (Exhibit D)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Appliances	98	6	42,616

Additional Comments:

- Due to the duration of the program in market and the revised eligibility requirements to a minimum of 20 years old, this Initiative appears to have reached market saturation and will be ending December 31, 2014.
- In an effort to capture additional savings in the perceived last year of the Initiative, the eligibility requirement for refrigerators was revised from 20 years old to 15 years old in Q2 2014.

3.2.1.2 Appliance Exchange Initiative (Exhibit E)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Appliances	51	11	18,841

Additional Comments:

- The design of the Initiatives, including eligible measures and incentives amounts are developed through the Residential Working Group. Retail Partner(s) are contracted by the OPA to deliver the initiatives province-wide. Individual LDCs have the opportunity to stage in-store events to drive the distribution of LDC coded Coupons and promotion of other programs in the portfolio
- To date there has only been one retailer participant in the Appliance Exchange Initiative.
- In 2012 there was a decrease in the number of window air conditioners being received through the program. A review of eligible measures in the Appliance Exchange program was conducted, and as these units are not cost effective on their own it was determined that they be removed from the program in order to improve the overall cost effectiveness of the Initiative
- Evaluation, Measurement, and Verification (EMV) results indicated that the value of savings for retired room air conditioner (AC) has dropped resulting in the retail participant not accepting window ACs during the Spring 2013 event. Future events will only collect eligible dehumidifiers.

3.2.1.3 Heating & Cooling Incentives Initiative (Exhibit B)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Equipment	1347	285	489,074

Additional Comments:

- Incentive levels appear to be insufficient to prompt participants to upgrade HVAC equipment prior to end of useful life. An Air Miles incentive was introduced in 2013 to try and encourage early replacement.
- This Initiative is contractor driven with LDCs responsible for marketing efforts to customers. More engagement with the HVAC contractor channel should be undertaken to drive a higher proportion of furnace and CAC sales to eligible units.
- Channel partners require timeliness of the incentive process to maintain a positive relationship between participants, contractors, the OPA and the participating LDC.
- LDC Heating & Cooling Incentive reports have been delayed and are not as complete and accurate as are required by LDCs to make adjustments to their marketing strategies.
- In an effort to build capacity, mandatory training has been instituted for all participating HVAC contractors. This will present a barrier for continued and future HVAC contractors. It has been noted that there are approximately 4500-5000 HVAC contractors in the province, however in 2013, only 1500 are participating in program.
- There are cases where non-participating contractors are offering their own incentives (by discounting their installations to match value of the OPA incentive) to make the sale.
- Changes to the Schedule in 2014 to allow for incentives for new installations, rather than strictly replacement units, may provide greater Initiative results.

3.2.1.4 Conservation Instant Coupon Initiative (Exhibit A)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Items	3322	5	73,819

Additional Comments:

- The timeframe for retailer submission of redeemed coupons vary from retailer to retailer. The delays and incomplete results reporting limits the ability to react and respond to Initiative performance or changes in consumer behaviour.
- Coupon booklets were not printed and mailed out in 2013 so were not widely available to consumers who do not have the ability to download and print online coupons. In addition, consumers may not have been aware of the online coupons.
- In 2013, LDCs were provided with 3 custom coded coupons. All coupons have been provided with LDC custom coding in 2014 which allows LDCs to promote coupons based on local preferences.
- The saveONenergy programs would benefit from specific end cap displays, aisle product stands and product-specific areas. Having products throughout a retail environment weakens the impact.

3.2.1.5 Bi-Annual Retailer Event Initiative (Exhibit C)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Items	9,049	11	164,540

Additional Comments:

- This Initiative is strongly influenced by the retail participants and has no direct involvement from the LDCs. More emphasis should be put on holding a participating retailer accountable to working with the LDC community.
- Program evolution, including new products and review of incentive pricing for the coupon Initiatives should be a regular activity to ensure continued consumer interest. Coupon offerings should delve into other products for around the home that offer similar savings potential.
- Communications regarding retailer participation continues to be delayed. Improved communications will aid in appropriate resource allocation and marketing of the Initiative.
- The timeframe for retailer submission of redeemed coupons vary from retailer to retailer. The delays and incomplete results reporting limits the ability to react and respond to Initiative performance or changes in consumer behaviour.

3.2.1.6 New Construction Program (Schedule B-2)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Homes	0	0	0

Initiative Activities/Progress: Additional Comments:

- This Initiative provides incentives to home builders for incorporating energy efficiency into their construction plans. To support this, LDCs need to provide education to the consumers regarding the importance of choosing the energy efficient builder upgrade options without an immediate benefit to the consumer.
- Following limited participation in 2011, the application process was revisited in 2012 to streamline administration in response to builder feedback. Participation levels continue to lag as homes are pre-approved but construction could take a year or more to be completed, further delaying results.
- Administrative requirements, in particular individual home modeling, must align with perceived stakeholder payback
- The addition of LED light fixtures, application process improvement and moving the incentive from the builder to the home-owner may increase participation.
- This Initiative would benefit from collaboration with the Natural Gas utilities.
- Performance enhancements were made in 2014 to allow Energy Star homes to qualify for incentives which should improve uptake.
- CND contracted the services of a third party to engage builders in 2014 and has seen minor participation increases.

3.2.1.7 Residential Demand Response Program (RDR) (Schedule B-3)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Devices	131	50	129

Initiative Activity Undertaken:

Groundwork has been underway to evaluate the available technologies and infrastructure required to deliver an effective, future-proof solution to customers. CND supported an application by Energate for a pilot on Consumer Engagement for the Smart Grid which has been credited towards this Initiative in 2013.

CND also began offering the **peaksaver PLUS** initiative to previous **peaksaver** participants by offering customers an In Home Display (IHD) to renew their participation agreements.

Additional Comments:

- Smart Meters installed by most LDCs do not have the capability to communicate directly to an IHD. When proposing technical Initiatives that rely on existing LDC hardware or technology there should be an extensive consultative process.
- The variable funding associated with installing a load controllable thermostat is not sufficient unless it is combined with an IHD which might not be possible all the time and when IHD is optional. The variable funding should offer a second tier for LDCs who chose to install a two-way communicating device which is incrementally more expensive.
- This is the main Initiative within the Residential portfolio that was to drive savings for LDC, however the 2012 evaluation indicated savings realized from the IHD were not statistically significant. LDCs were advised that the evaluation of the IHDs would continue with 2013 data but the OPA is still unable to attribute kWh savings to these devices.
- As identified in the OPA's Evaluation Report in 2012 Wi-Fi enabled thermostats provide the greatest risk to the program. Rules need to evolve and be flexible to keep up with the changes in technology.
- In 2013, CND began discussions with the OPA to launch a Conservation Fund pilot to measure the achievable potential in kWh, kW and gas savings attributed to smart thermostats. A contract was executed in July 2014 and was launched to market one week later. Results from that pilot will be available in 2015.

3.2.2 COMMERCIAL AND INSTITUTIONAL PROGRAM

Description: Provides commercial, institutional, agricultural and industrial organizations with energy-efficiency programs to help reduce their electricity costs while helping Ontario defer the need to build new generation and reduce its environmental footprint. Programs offer qualified participants funding towards energy audits, replacements or retrofits of inefficient equipment or incentives for pursuing new construction that exceeds our existing codes and standards. Businesses can also receive incentives for controlling and reducing their electricity demand at specific times.

Objective: Designed to assist building owners and operators as well as tenants and occupants in achieving demand and energy savings, and to facilitate a culture of conservation among these communities as well as the supply chains which serve them.

Discussion: The Commercial and Institutional Program portfolio continues to be the flagship offering for CND's customer base. The savings attributed to participation in this portfolio are critical to the achievement of target. Building on momentum established with customers and channel partners in 2011 and 2012, 2013 saw an increase in participation and quality of project submissions.

LDC program management has been hampered by varying rule interpretation, limited marketing ability, a somewhat inflexible online system of checks and balances and revolving OPA support personnel.

Program Activities Undertaken: Co-promotion and co-branding techniques are frequently used in the Commercial and Institutional (C&I) programs to maintain cost-effectiveness and increase overall brand awareness. Collaboration with Kitchener-Wilmot Hydro and Waterloo North Hydro on creative, event execution and sponsorship has been effective in reaching a wider audience with consistent messaging while achieving cost-savings.

Continuing to be the most effective activity to cultivate participation is actively engaging with customers on site-visits. An increase in staff for the department has allowed flexibility to meet the demands of the internal application support and review along with outside sales required to run a success portfolio.

Joint focus by the Waterloo Region LDCs on educating and training channel partners and shared customers drove an increase in awareness of the saveONenergy initiatives. Using the channel partners as an extended sales force has resulted in a year over year increase to participation.

The following bulleted list provides an overview of the program activities undertaken for the C&I programs in 2013.

- Joint delivery of nine breakfast events focused on specific opportunities and end-uses.
- The saveONenergy Symposium is a one-day tradeshow style event that pairs 60+ exhibitors of products and services with customers from across the Waterloo Region. This joint event attracts more than 250 attendees and offers additional featured workshops to further enlighten customers. This was the fourth time running the event and featured a keynote speaker from Canadian Tire.

- Partnership with the Cambridge Chamber of Commerce offers a variety of marketing avenues; event sponsorship, printed quarterly mail stuffers and Spectrum magazine advertisement and earned media.
- Advertising in Exchange Magazine offers print and earned media opportunities.
- Sponsorship of the joint Greater Kitchener Waterloo Chamber of Commerce and Cambridge Chamber of Commerce Business to Business show on 570News offers a new engagement opportunity through live radio segments and commercials.
- Presenting sponsors of Sustainable Waterloo Region connects with local businesses that have made a pledge to reduce greenhouse gas emissions and made energy efficiency a priority in their business.
- Produced video case studies¹ on projects completed in the ERII program to showcase technology and participants and motivate others to do the same.
- Postcard sized mailers went out to GS>50kW customers promoting specific technology upgrade opportunities which generated on a small number of leads.
- Recognition of prior year participants in a newspaper advertisement (Cambridge Times) and jointly with Kitchener-Wilmot Hydro and Waterloo North Hydro in The Record.

¹ The videos can be viewed on a joint [youtube.com](#) webpage.

- **Efficiency: Equipment Replacement Incentive (ERII) (Schedule C-2)**

Initiative Activities/Progress:

Additional Comments:

Unit	Incremental Activity	Incremental Net kW	Incremental Net kWh
Projects	146	1,377	7,268,169

- A large proportion of LDC savings are attributed to ERII.
- Capability building programs offered by the OPA have had very positive contributions to ERII program participation and a drive for deeper measure savings.
- Participation in this Initiative is impacted by the state of the economy and the ability of commercial/institutional facilities to complete capital improvement projects.
- Applicants and Applicant Representatives continue to express dissatisfaction and difficulty with the online application system. This issue has been addressed by LDCs through application training workshops, Key Account Managers, channel partner/contractor training and LDC staff acting as customer Application Representatives. Although this has been an effective method of overcoming these issues and encouraging submissions, it also reflects on the complexity and time consuming nature of the application process.
- Prescriptive and Engineered worksheets provide a much needed simplified application process for customers. However, the eligible measures need to be updated and expanded in both technology and incentive amounts to address changing product costs and evolution of the marketplace.
- Processing Head Office application became much easier for the Lead LDC after Schedule changes came into effect in August 2013. The changes implemented allowed the Lead LDC to review and approve all facilities in a Head Office application on behalf of all satellite LDCs under certain circumstances.
- The application process for Head Office projects remains a significant barrier. Applicants need to manually enter one application per facility associated with the project can be extremely onerous, often requiring a dedicated resource.
- Streamlining of the settlements systems resulted in significant improvement in the payment process in 2013.

3.2.2.1 Direct Install Initiative (DIL) (Schedule C-3)

Initiative Activities/Progress:

Additional Comments:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Projects	39	54	188,436

- Successful execution of the previous rendition of this Initiative has continued to result in diminished potential for the 2011-2014 Initiative in CND's service territory
- LED lighting was introduced in 2013 as a new measure and has been well received by customers who may not have previously qualified for DIL eligible upgrades. This is an efficient product with a long estimate useful life.
- The inclusion of a standard incentive for additional measures increased project size and drove higher energy and demand savings results in some situations.
- Currently LDCs are unable to offer these standard incentives to prior participants. The ability to return to prior participants and offer a standard incentive on the remaining measures has potential to provide additional energy and demand savings.

3.2.2.2 Existing Building Commissioning Incentive Initiative (Schedule C-6)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Buildings	0	0	0

Additional Comments:

- There was minimal participation for this Initiative. It is suspected that the lack of participation in the program is a result of the Initiative being limited to space cooling and a limited window of opportunity (cooling season) for participation.

3.2.2.3 New Construction/ Major Renovation Initiative (HPNC) (Schedule C-4)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Buildings	2	60	3

Additional Comments

- There remains a long sales cycle for these projects. It is very burdensome to a customer to require them to choose and provide all project aspects before a permit is issued. Equipment is typically selected after the point of permit approval and still available for influence under the initiative.
- Participants estimated completion dates tend to be inaccurate and are usually 4-6 months longer than anticipated completion dates. This could result in diminished savings towards target when facilities are not substantially completed by December 31, 2014.
- The effort required to participate through the custom stream exceeds the value of the incentive for many customers.

3.2.2.4 Energy Audit Initiative

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Audits	3	26	145,352

Additional Comments

- The introduction of the new audit component for one system (i.e. compressed air), has increased customer participation in 2013 for other LDCs but has not be utilized by customers of CND.
- The Energy Audit Initiative is considered an 'enabling' Initiative and 'feeds into' other saveONenergy Initiatives so is given a lower priority status.

3.2.3 INDUSTRIAL PROGRAM

Description: Large facilities are discovering the benefits of energy efficiency through the Industrial Programs which are designed to help identify and promote energy saving opportunities. It includes financial incentives and technical expertise to help organizations modernize systems for enhanced productivity and product quality, as well as provide a substantial boost to energy productivity.

Objective: To provide incentives to both existing and new industrial customers to motivate the installation of energy efficient measures and to promote participation in demand management.

Discussion: The Industrial Program Portfolio has been able to provide valuable resources to large facilities such as Energy Managers and enabling Engineering Studies. The Engineering Studies in particular provide a unique opportunity for a customer to complete a comprehensive analysis of an energy intensive process that they would not otherwise be able to undertake. The Energy Manager Initiative provides customers with a skilled individual whose only role is to assist them with conservation Initiatives. To date these Energy Managers have played a key role in customer participation.

For 2013 the change to the threshold for small capital projects and the new small capital project agreement are expected to improve participation. Likewise, a decision to proceed with 2012 natural gas load displacement generation projects applications will also increase uptake although the limited time to bring new projects into service is a barrier.

3.2.3.1 Process & Systems Upgrades Initiative (PSUI) (Schedule D-1)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Projects	1	80	691,097

Activity Undertaken:

This Initiative is heavily dependent on direct involvement with interested customers. CND worked with a limited number of customers in this program stream. Most industrial customers pursue projects funded through the C&I programs.

CND current has multiple Engineering Studies and Capital Incentive project applications underway.

Additional Comments:

- CND received a Project Incentive application for a large behind the meter generation project in 2012 but the project was held by the OPA for 24 months due to clarity on eligibility of these types of projects. The significant delay to the project meant that it would not complete before the end of 2014, significantly reducing the ability for CND to meet its 2014 target on demand.
- Numerous energy studies have been submitted. This is a strong indication that there is the potential for large projects with corresponding energy savings.
- This Initiative is limited by the state of the economy and the ability of a facility to complete large capital upgrades.
- There is typically a long sales cycle for these projects, and then a long project development cycle. As such, limited results are expected to be generated in 2013. The majority of the results are expected in 2014 with a much reduced benefit to cumulative energy savings targets.
- Revisions were made to the ERII Initiative which allowed smaller projects to be directed to the Commercial stream.
- A business case was submitted by the Industrial Working Group in July 2012 which would change the upper limit for a small project from 700 MWh to 1 million dollars in incentives. This would allow more projects to be eligible for the new small capital project agreement and increase participant uptake, while still protecting the ratepayer. This small capital project agreement was finalized in August 2013.

3.2.3.2 Monitoring & Targeting Initiative (M&T) (Schedule D-2)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Project	0	0	0

Initiative Activity Undertaken:

CND received three applications for M&T systems. They are at various stages of approval and implementation at this time.

Additional Comments:

- The M&T Initiative is targeted to larger customers with the capacity to review the M&T data. This review requires the customer facility to employ an Energy Manager, or a person with equivalent qualifications, which has been a barrier for some customers. As such, a limited number of applications have been received to date.
- Through the change management process in 2013, changes are being made to ERII to allow smaller facilities to employ M&T systems.

3.2.3.3 Energy Manager Initiative (Schedule D-3)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Projects	9	33	5,215

Initiative Activity Undertaken:

This Initiative was presented to a variety of customers with great support for the Roving Energy Manager (REM) role and interest in the Embedded Energy Manager (EEM) role. The following activity occurred during 2013:

- Embedded Energy Manager:
 - One active EEM was renewed in 2013 (shared with Peterborough Utilities)
 - One approved EEM had still not been hired
 - One application underway for a third EEM (shared with Kitchener-Wilmot Hydro and Waterloo North Hydro)
- Roving Energy Manager:
 - One active REM was hired (shared with Waterloo North Hydro)

Additional Comments:

- The Energy Managers have proven to be a popular and useful resource for larger customers. There are approximately 70 EEMs and 25 REMs being utilized by customers across the province.
- Some LDCs and Customers are reporting difficulties in hiring capable REMs and EEMs, in some instances taking up to 7 months to have a resource in place.
- New Energy Managers require training, time to familiarize with facilities and staff and require time to establish credibility.

3.2.3.4 **Key Account Manager (KAM) (Schedule D-4)**

Initiative Activities/Progress:

CND, along with its neighbouring LDCs, Kitchener-Wilmot Hydro and Waterloo North Hydro had approval for a KAM but did not utilize the funding to the full extent in 2013. Shared resources can be difficult to manage from a priority perspective and the availability of qualified candidates is extremely low.

Additional Comments

- Customers appreciate dealing with a single contact to interface with an LDC, a resource that has both the technical and business background who can communicate easily with the customer and the LDC.
- Finding this type of skill set has been difficult. In addition, the short-term contract and associated energy targets discourage some skilled applicants resulting in longer lead times to acquire the right resource.

3.2.3.5 Demand Response 3 (D-6)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Facilities	4	525	11,952

Initiative Activity Undertaken:

As a standard deliverable in a site visit, opportunities and customer interest to participate in the Demand Response 3 (DR-3) program is always investigated. Aggressive sales tactics by the aggregators has turned some customers off of participating.

Additional Comments:

- The program was a highlighted focus at one of nine customer breakfast sessions in 2013. No activity or interest peaked following that session.
- Class A customers benefit three fold from load curtailment on “high-five days” over participation in the DR3 program. CND has encouraged large users to monitor the system and work towards benefits in their rate class over DR3.
- Until early 2013 customer data was not provided on an individual customer basis due to contractual requirements with the aggregators. This limited LDCs’ ability to effectively market to prospective participants and verify savings.
- Market conditions and just-in-time delivery continue to dissuade customers from participating in the program due to the nature of long-term contractual requirements.
- Aggressive sales techniques coupled with poor customer services by the Aggregators has deterred many of CND’s customers from considering participating. Greater emphasis should be placed on LDC engaged delivery and formal partnerships with Aggregators.
- No program improvements were made in 2013 however, it was accepted that prior participants who renew their DR3 contract within the 2011-2014 term will contribute to LDC targets.
- As of 2013, Aggregators were able to enter into contracts beyond 2014. This has allowed them to offer a more competitive contract price (5 year) than if limited to 1 or 2 year contracts.
- Metering and settlement requirements are expensive and complicated and can reduce customer compensation amounts, and present a barrier to smaller customers.
- Compensation amounts for new contracts and renewals have been reduced from the initial launch of this program (premium zones and 200 hour option have been discontinued) and subsequently there has been a corresponding decrease in renewal revenue.

3.2.4 LOW INCOME INITIATIVE (HOME ASSISTANCE PROGRAM) (Schedule E-1)

Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Homes	1,041	31	458,390

Initiative Activity Undertaken:

CND engaged with Greensaver late in 2011 to offer third party delivery of the Home Assistance Program (HAP) in partnership with REEP Green Solutions. 2012 kicked off with an introductory event to a variety of social agencies across the Waterloo Region. Additional effort was put into working with the Municipality of the Region of Waterloo to retrofit their qualifying housing stock but proved a lengthier process than first anticipated.

CND carried the momentum into 2013 by developing key relationships with Cambridge Housing as well as with the Region of Waterloo who have also engaged with Kitchener-Wilmot Hydro and Waterloo North Hydro.

For the HAP Initiative a variety of print marketing was produced to educate residents and social agencies about the offers.

Additional Comments:

- The process for enrolling in social housing was complicated and time consuming. This was addressed in late 2012 and is showing benefits in 2013.
- The financial scope, complexity, and customer privacy requirements of this Initiative are challenging for LDCs and most have contracted this program out.
- The primary, cost-effective delivery model for this Initiative remains working through social agencies. Reaching out to engage individual households, without access to the Low Income Energy Assistance Program data in our customer database, is too costly and time consuming.

3.2.5 PRE-2011 PROGRAMS

Savings were realized towards LDC's 2011-2014 target through pre-2011 programs. The targeted customer types, objectives, descriptions, and activities of these programs are detailed in Appendix A

4 2013 LDC CDM Results

The following Tables were provided by the OPA and represent the net verified CDM results and contributions toward 2014 target for CND Hydro in 2013.

Table 1: Cambridge and North Dumfries Hydro Inc. Initiative and Program Level Net Savings by Year (Scenario 1)

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)				Program-to-Date Verified Progress to Target (excludes DR)	
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2014 Net Annual Peak Demand Savings (kW)	2011-2014 Net Cumulative Energy Savings (kWh)
Consumer Program															
Appliance Retirement	Appliances	440	175	98		24	9	6		175,906	67,918	42,616		39	992,405
Appliance Exchange	Appliances	23	25	51		2	4	11		2,690	6,491	18,841		15	66,564
HVAC Incentives	Equipment	978	1,114	1,347		359	248	285		670,601	428,617	489,074		891	4,946,402
Conservation Instant Coupon Booklet	Items	4,891	296	3,322		11	2	5		179,901	13,391	73,819		18	907,418
Bi-Annual Retailer Event	Items	9,119	10,161	9,049		16	14	11		281,459	256,502	164,540		42	2,224,422
Retailer Co-op	Items	0	0	0		0	0	0		0	0	0		0	0
Residential Demand Response	Devices	82	0	131		46	0	50		0	0	129		0	129
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Residential New Construction	Homes	0	0	0		0	0	0		0	0	0		0	0
Consumer Program Total						458	277	369		1,310,556	772,919	789,021		1,006	9,137,341
Business Program															
Retrofit	Projects	23	117	146		256	1,203	1,377		1,336,743	6,206,217	7,268,169		2,807	38,367,969
Direct Install Lighting	Projects	123	108	39		158	95	54		398,982	356,510	188,436		277	2,958,535
Building Commissioning	Buildings	0	0	0		0	0	0		0	0	0		0	0
New Construction	Buildings	0	0	2		0	0	60		0	0	337,062		60	674,125
Energy Audit	Audits	0	1	3		0	5	26		0	25,176	145,352		32	366,233
Small Commercial Demand Response	Devices	1	0	1		1	0	1		0	0	1		0	1
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Demand Response 3	Facilities	3	3	4		180	180	346		7,018	2,621	5,215		0	14,854
Business Program Total						595	1,483	1,864		1,742,744	6,590,523	7,944,236		3,176	42,381,718
Industrial Program															
Process & System Upgrades	Projects	0	0	1		0	0	80		0	0	691,097		80	1,382,194
Monitoring & Targeting	Projects	0	0	0		0	0	0		0	0	0		0	0
Energy Manager	Projects	0	0	9		0	0	33		0	0	175,934		11	208,180
Retrofit	Projects	22	0	0		466	0	0		3,083,118	0	0		466	12,332,473
Demand Response 3	Facilities	6	7	4		544	705	525		31,908	16,979	11,952		0	60,838
Industrial Program Total						1,009	705	637		3,115,026	16,979	878,983		557	13,983,684
Home Assistance Program															
Home Assistance Program	Homes	0	14	1,041		0	1	31		0	11,421	458,390		32	948,352
Home Assistance Program Total						0	1	31		0	11,421	458,390		32	948,352
Aboriginal Program															
Home Assistance Program	Homes	0	0	0		0	0	0		0	0	0		0	0
Direct Install Lighting	Projects	0	0	0		0	0	0		0	0	0		0	0
Aboriginal Program Total						0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011															
Electricity Retrofit Incentive Program	Projects	64	0	0		1,191	0	0		6,710,956	0	0		1,191	26,843,823
High Performance New Construction	Projects	2	0	0		11	1	0		57,223	1,049	0		12	232,038
Toronto Comprehensive	Projects	0	0	0		0	0	0		0	0	0		0	0
Multifamily Energy Efficiency Rebates	Projects	0	0	0		0	0	0		0	0	0		0	0
LDC Custom Programs	Projects	0	0	0		0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011 Total						1,202	1	0		6,768,179	1,049	0		1,203	27,075,862
Other															
Program Enabled Savings	Projects	0	1	1		0	0	8		0	0	51,500		8	103,000
Time-of-Use Savings	Homes	0	0	0		0	0	0		0	0	0		0	0
Other Total						0	0	8		0	0	51,500		8	103,000
Adjustments to 2011 Verified Results								63			517,468	0		63	2,069,872
Adjustments to 2012 Verified Results								302				830,319		302	2,490,957
Energy Efficiency Total						2,494	1,582	1,988		12,897,579	7,373,292	10,104,833		5,981	93,554,134
Demand Response Total (Scenario 1)						770	885	921		38,926	19,599	17,297		0	75,822
Adjustments to Previous Years' Verified Results Total						0	63	302		0	517,468	830,319		365	4,560,829
OPA-Contracted LDC Portfolio Total (inc. Adjustments)						3,264	2,530	3,211		12,936,504	7,910,359	10,952,449		6,346	98,190,785
Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).		The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.										Full OEB Target:	17,680	73,660,000	
*Includes adjustments after Final Reports were issued		Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated										% of Full OEB Target Achieved to Date (Scenario 1):	35.9%	133.3%	

Table 4: Summarized Program Results

Program	Gross Savings		Net Savings		Contribution to Targets	
	Incremental Peak Demand Savings (MW)	Incremental Energy Savings (GWh)	Incremental Peak Demand Savings (MW)	Incremental Energy Savings (GWh)	Program-to-Date: Net Annual Peak Demand Savings (MW) in 2014	Program-to-Date: 2011-2014 Net Cumulative Energy Savings (GWh)
Consumer Program Total	0.69	1.37	0.37	0.79	1.01	9.14
Business Program Total	2.48	10.97	1.86	7.94	3.18	42.38
Industrial Program Total	0.65	0.95	0.64	0.88	0.56	13.98
Home Assistance Program Total	0.03	0.46	0.03	0.46	0.03	0.95
Pre-2011 Programs completed in 2011 Total	0.00	0.00	0.00	0.00	1.20	27.08
Total OPA Contracted Province-Wide CDM Programs	3.85	13.75	2.90	10.07	6.35²	98.19²

² Program-to-Date savings will not total the line items in the column due to adjustments made to previous years' results which have been factored in to the overall Contribution to Target

4.1 Evaluation

Key findings from the OPA's 2013 Evaluation reports can be found in Appendix B. This information was taken from the LDC Extranet in a document posted on September 14, 2014 titled: 2013 Key Evaluation Findings.

4.2 Spending

Table 5: 2013 Spending by Initiative

Initiative	Program Administration Budget (PAB)	Participant Based Funding (PBF)	Participant Incentives (PI)	Capability Building Funding (CBF)	TOTAL
Consumer Program					
Appliance Retirement	\$111,034.84	\$0	\$0	\$0	\$111,034.84
Appliance Exchange	\$0	\$0	\$0	\$0	\$0
Heating & Cooling Incentives	\$229,816.76	\$0	\$0	\$0	\$229,816.76
Coupon & Retailer Program	\$88,355.80	\$0	\$0	\$0	\$88,355.80
Residential Demand Response	\$77,456.98	\$44,145.00	\$0	\$0	\$121,601.98
New Construction Program	\$2,103.00	\$0	\$0	\$0	\$2,103.00
Business Program					
Efficiency: Equipment Replacement Initiative	\$263,271.52	\$0	\$801,286.59	\$0	\$1,064,588.11
Direct Installed Lighting	\$39,386.70	\$9,516.00	\$65,290.75	\$0	\$114,193.45
Existing Building Commissioning Incentive	\$0	\$0	\$0	\$0	\$0
New Construction and Major Renovation Initiative	\$9,680.69	\$0	\$0	\$0	\$9,680.69
Energy Audit	\$28,011.46	\$0	\$6,400.00	\$0	\$34,411.46
Industrial Program					
Process & System Upgrades	\$10,317.52	\$0	\$89,894.40	\$0	\$100,211.92
a) preliminary engineering study	\$1,289.69	\$0	\$0	\$0	\$1,289.69
b) detailed engineering study	\$5,158.76	\$0	\$89,894.40	\$0	\$95,053.16
c) program incentive	\$3,869.07	\$0	\$0	\$0	\$3,869.07
Monitoring & Targeting	\$1,289.69	\$0	\$0	\$0	\$1,289.69
Energy Manager	\$7,888.25	\$0	\$103,257.85	\$0	\$111,146.10
Key Account Manager ("KAM")	\$3,275.51	\$0	\$0	\$0	\$3,275.51
Demand Response	\$5,217.26	\$0	\$0	\$0	\$5,217.26
Home Assistance Program					
Home Assistance Program	\$28,866.70	\$0	\$279,276.88	\$0	\$305,143.58
TOTAL SPENDING	\$905,972.68	\$25,776.00	\$1,373,291.47	\$0	\$2,305,040.15

Table 6: Cumulative Spending (2011-2014)

Initiative	Program Administration Budget (PAB)	Participant Based Funding (PBF)	Participant Incentives (PI)	Capability Building Funding (CBF)	TOTAL
Consumer Program					
Appliance Retirement	\$215,911.35	\$0	\$0	\$0	\$215,911.35
Appliance Exchange	\$4,212.15	\$0	\$0	\$0	\$4,212.15
Heating & Cooling Incentives	\$317,300.40	\$0	\$0	\$0	\$317,300.40
Coupon & Retailer	\$160,159.10	\$0	\$0	\$0	\$160,159.10
Residential Demand Response	\$119,566.03	\$44,145.00	\$0	\$0	\$163,711.03
New Construction Program	\$6,601.68	\$0	\$0	\$0	\$6,601.68
Business Program					
Efficiency: Equipment Replacement Initiative	\$508,358.13	\$0	\$2,234,979.26	\$0	\$2,743,337.39
Direct Installed Lighting	\$88,887.23	\$64,660.00	\$275,876.50	\$0	\$429,423.73
Existing Building Commissioning Incentive	\$0	\$0	\$0	\$0	\$0
New Construction	\$27,639.52	\$0	\$0	\$0	\$27,639.52
Energy Audit	\$63,301.77	\$0	\$13,183.10	\$0	\$76,484.87
Industrial Program					
Process & System Upgrades	\$34,164.67	\$0	\$89,894.40	\$0	\$124,059.07
a) preliminary engineering study	\$6,020.48	\$0	\$0	\$0	\$0
b) detailed engineering study	\$16,874.93	\$0	\$89,894.40	\$0	\$89,894.40
c) program incentive	\$11,269.26	\$0	\$0	\$0	\$0
Monitoring & Targeting	\$1,289.69	\$0	\$0	\$0	\$0
Energy Manager	\$20,422.75	\$0	\$103,257.85	\$0	\$123,680.60
Key Account Manager ("KAM")	\$12,248.90	\$0	\$0	\$0	\$12,248.90
Demand Response 3	\$11,380.78	\$0	\$0	\$0	\$11,380.78
Home Assistance Program					
Home Assistance Program	\$65,374.36	\$0	\$280,016.88	\$0	\$345,391.24
Pre 2011 Programs					
Electricity Retrofit Incentive Program	\$0	\$0	\$0	\$0	\$0
High Performance New Construction	\$0	\$0	\$0	\$0	\$0
Initiatives Not In Market					
Midstream Electronics	\$0	\$0	\$0	\$0	\$0
Midstream Pool Equipment	\$0	\$0	\$0	\$0	\$0
Demand Service Space Cooling	\$0	\$0	\$0	\$0	\$0

Demand Response 1 (Commercial)	\$0	\$0	\$0	\$0	\$0
Demand Response 1 (Industrial)	\$0	\$0	\$0	\$0	\$0
Home Energy Audit Tool	\$0	\$0	\$0	\$0	\$0
TOTAL Province-wide CDM PROGRAMS	\$1,656,818.51	\$80,920.00	\$3,025,092.99	\$0	\$4,762,831.50

4.3 Additional Comments

Overall, 2013 proved to be a successful year for CND in CDM. The hard work, early customer engagement and collaborative delivery built a solid foundation for 2013. Incremental activity in ERII increased by 17% over the previous year and the diversity of projects was expanded.

2013 also saw the internal dedicated resources of CND increase from 3 full time equivalents to 4 by mid-year. Third party delivery agents and contractors were also an important component to the delivery of turn-key ready programs such as HAP. Engaging with local business to secure resources such as Energy Managers played a part in driving further results and more process related projects.

CND's collaborative effort in developing a new marketing theme for the key consumer initiatives proved successful in increasing awareness of the brand and offerings. A direct to the customer engagement strategy continues to be the most effective means to drive participation in the C&I and Industrial portfolios. This will continue to be a primary focus and driver to achieve the MW peak demand target.

With the energy target achieved in Q4 of 2012, results continue to exceed expectation and are 33% above the 2014 target.

5 Combined CDM Reporting Elements

5.1 Progress Towards CDM Targets

The following Tables (7 & 8) report on the final verified results for CND Hydro towards the 2014 target.

Table 7: Net Peak Demand Savings at the End User Level (MW)

Implementation Period	Annual (MW)			
	2011	2012	2013	2014
2011 – Verified by OPA	3.3	2.5	2.5	2.5
2012 – Verified by OPA	0.1	2.5	1.6	1.6
2013 – Verified by OPA	0.0	0.3	3.2	2.3
2014				
Verified Net Annual Peak Demand Savings in 2014:				6.3
CND 2014 Annual CDM Capacity Target:				17.7
Verified Portion of Peak Demand Savings Target Achieved (%):				35.6%

Table 8: Net Energy Savings at the End-User Level (GWh)

Implementation Period	Annual (GWh)				Cumulative (GWh)
	2011	2012	2013	2014	2011-2014
2011 – Verified by OPA	12.9	12.9	12.9	12.8	51.5
2012 – Verified by OPA	0.5	7.9	7.9	7.8	24.1
2013 – Verified by OPA	0.0	0.8	11.0	10.8	22.5
2014					
Verified Net Cumulative Energy Savings 2011-2014:					98.2
CND 2011-2014 Cumulative CDM Energy Target:					73.7
Verified Portion of Cumulative Energy Target Achieved (%):					133.3%

5.2 Variance from Strategy

The net verified results in this report demonstrate a variance from the original strategy submitted to the OEB on November 1, 2010. The 2013 results for peak demand savings continue to fall short of the annual milestone mark but the results for cumulative energy have continued to surpass the 2014 prediction by a large margin.

The gap in forecasted versus actual can be attributed to a few key points:

- Initiatives such as DR-3 and RDR weigh heavily into the success of meeting our MW target. These programs have proven to have a significant barrier to entry into the market.
- Large projects currently pre-approved and underway require an extended timeline for implementation and completion. The groundwork for projects of this nature has already been laid and savings have begun to appear in 2013 and will continue into 2014.
- The delays in approval for Behind the Meter generation projects on the part of the OPA have directly resulted in a shortfall of demand achievement for CND.

5.3 Outlook to 2014 and Strategy Modifications

The cumulative effect on net energy savings combined with a strong attribution of savings from pre-2011 programs played a large role in CND achieving the energy target in 2012. CND is currently working on the roll out of RDR and anticipates strong results from that to be realized in 2014.

The outlook to 2014 is encouraging. When the persistence of demand response programs is factored in, CND is further along in the MW savings than this report would indicate. With the inclusion of persistence from demand response initiatives, CND would have reached 40% of target by the end of 2013. There is also a pipeline of projects in ERII, and PSUI which will also assist in driving towards achieving the demand target.

6 APPENDIX A

Initiative Descriptions

CONSUMER PROGRAMS

Appliance Retirement Initiative

Target Customer Type: Residential customers

Initiative Frequency: Year round

Objectives: Achieve energy and demand savings by permanently decommissioning certain older, inefficient refrigeration appliances.

Description: This is an energy efficiency Initiative that offers individuals and businesses free pick-up and decommissioning of old large refrigerators and freezers. Window air conditioners and portable dehumidifiers will also be picked up if a refrigerator or a freezer is being collected.

Targeted End Uses: Refrigerators, freezers, window air conditioners and portable dehumidifiers

Delivery: OPA centrally contracts for province-wide marketing, call center, appliance pick-up and decommissioning process. LDC provides local marketing and coordination with municipal pick-up where available. Additional detail is available:

- Schedule B-1, Exhibit D
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-1%20Residential%20Program.pdf and
- saveONenergy website
<https://saveonenergy.ca/Consumer/Programs/Appliance-Retirement.aspx>

In Market Date: February 17, 2011

Appliance Exchange Initiative

Target Customer Type: Residential customers

Initiative Frequency: Spring and fall

Objective: The objective of this Initiative is to remove and permanently decommission older, inefficient window air conditioners and portable dehumidifiers that are in Ontario.

Description: This Initiative involves appliance exchange events. Exchange events are held at local retail locations and customers are encouraged to bring in their old room air conditioners and dehumidifiers in exchange for coupons/discounts towards the purchase of new energy efficient equipment. Window ACs were discontinued from the program in 2013.

Targeted End Uses: Window air conditioners and portable dehumidifiers

Delivery: OPA contracts with participating retailers for collection of eligible units. Additional detail is available:

- Schedule B-1, Exhibit C
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-1%20Residential%20Program.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

Heating & Cooling Incentives Initiative

Target Customer Type: Residential customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to encourage the replacement of existing heating systems with high efficiency furnaces equipped with Electronically Commutated Motors (ECM), and to replace existing central air conditioners (CAC) with ENERGY STAR qualified systems and products.

Description: This is an energy efficiency Initiative that provides rebates for the replacement of old heating or cooling systems with high efficiency furnaces (equipped with ECM) and Energy Star qualified CACs by approved Heating, Refrigeration, and Air Conditioning Institute (HRAI) qualified contractors.

Targeted End Uses: CACs and furnaces

Delivery: OPA contracts centrally for delivery of the program and LDCs are encouraged to convince local contractors to participate in the Initiative. Additional detail is available:

- Schedule B-1, Exhibit B
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-1%20Residential%20Program.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

In Market Date: February 17, 2011

Conservation Instant Coupon Booklet Initiative

Target Customer Type: Residential customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to encourage households to purchase energy efficient products by offering discounts.

Description: This Initiative provides customers with year round coupons. The coupons offer instant rebates towards the purchase of a variety of low cost, easy to install energy efficient measures and can be redeemed at participating retailers. Booklets were directly mailed to customers and were also available at point-of-purchase. Downloadable coupons were also available at www.saveoneenergy.ca.

Targeted End Uses: ENERGYSTAR® qualified standard Compact Fluorescent Lights (CFLs), ENERGYSTAR® qualified Light Fixtures lighting control products, weather-stripping, hot water pipe wrap, electric water heater blanket, heavy duty plug-in timers, advanced power bars, clothesline and baseboard programmable thermostats

Delivery: The OPA develops the electronic version of the coupons and posts them online for download. Three LDC specific coupons were made available for local marketing and utilization by LDCs. The OPA enters into agreements with retailers to honour the coupons.

Additional detail is available:

- Schedule B-1, Exhibit A
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-1%20Residential%20Program.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

In Market Date: April 2011

Bi-Annual Retailer Event Initiative

Target Customer Type: Residential customers

Initiative Frequency: Bi-annual events

Objective: The objective of this Initiative is to provide instant point of purchase discounts to individuals at participating retailers for a variety of energy efficient products.

Description: Twice a year (spring and fall), participating retailers host month-long rebate events. During the months of April and October, customers are encouraged to visit participating retailers where they can find coupons redeemable for instant rebates towards a variety of low cost, easy to install energy efficient measures.

Targeted End Uses: Same as the conservation instant coupon booklet Initiative

Delivery: The OPA enters into arrangements with participating retailers to promote the discounted products, and to post and honour related coupons. LDCs also refer retailers to the OPA. Additional detail is available:

- Schedule B-1, Exhibit C
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-1%20Residential%20Program.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

In Market Date: April 2011

NEW CONSTRUCTION PROGRAM

Target Customer Type(s): Residential Customers

Objective: The objective of this Initiative is to provide incentives to participants for the purpose of promoting the construction of energy efficient residential homes in the Province of Ontario.

Description: This is an energy efficiency Initiative that provides incentives to homebuilders for constructing new homes that are efficient, smart, and integrated (applicable to new single family dwellings). Incentives are provided in two key categories as follows:

- Incentives for homebuilders who install electricity efficiency measures as determined by a prescriptive list or via a custom option.
- Incentives for homebuilders who meet or exceed aggressive efficiency standards using the EnerGuide performance rating system.

Targeted End Uses: all off switch, ECM motors, ENERGY STAR qualified central a/c, lighting control products, lighting fixtures, EnerGuide 83 whole home, EnerGuide 85 whole homes

Delivery: Local engagement of builders will be the responsibility of the LDC and will be supported by OPA air coverage driving builders to their LDC for additional information. Additional detail is available:

- Schedule B-1, Exhibit C
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20B-2%20New%20Construction%20Program.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

In Market Date: February 17, 2011

Residential Demand Response Initiative

Target Customer Type(s): Residential and Small Commercial Customers

Initiative Frequency: Year round

Objective: The objectives of this Initiative are to enhance the reliability of the Independent Electricity System Operator controlled grid by accessing and aggregating specified residential and small commercial end uses for the purpose of load reduction, increasing consumer awareness of the importance of reducing summer demand and providing consumers their current electricity consumption and associated costs.

Description: In *peaksaver*PLUS™ participants are eligible to receive a free programmable thermostat or switch, including installation. Participants also receive access to price and real-time consumption information on an In Home Display (IHD). LDCs were given the choice to continue to offer the standard load control program (programmable thermostat or switch with a \$25 bill credit) for the first 8 months of 2011 (referred to as *peaksaver*® Extension). After August 2011, the Extension ended and the program (including marketing) ceased until new IHD products were available.

Targeted End Uses: CACs, water heaters and pool pumps

Delivery: LDC's recruit customers and procure technology. Additional detail is available:

- Schedule B-1, Exhibit C
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/SCHED_2011_ResDR_B_3_110727%28MJB%29v15_redacted.pdf and
- saveONenergy website <https://saveonenergy.ca/Consumer.aspx>

In Market Date: Due to delays in technology availability and interoperability, this program was not in market in 2012.

Low Income Initiative (Home Assistance Program [HAP])

Target Customer Type: Income qualified residential customers

Objective: The objective of this Initiative is to offer free installation of energy efficiency measures to income qualified households for the purpose of achieving electricity and peak demand savings.

Description: This is a turnkey Initiative for income qualified customers. It offers residents the opportunity to take advantage of free installation of energy efficient measures that improve the comfort of their home, increase efficiency, and help them save money. All eligible customers receive a Basic and Extended Measures Audit, while customers with electric heat also receive a Weatherization Audit. The Initiative is designed to coordinate efforts with gas utilities.

Targeted End Uses: End uses based on results of audit

Delivery: LDC delivered. Additional detail is available:

- Schedule E
<http://www.powerauthority.on.ca/sites/default/files/page/Low%20Income%20Schedule%20-%20redacted%20version.pdf>

In Market Date: March 2012

COMMERCIAL AND INSTITUTIONAL PROGRAMS

Equipment Replacement Incentive Initiative: Commercial, Institutional, Agricultural and Industrial Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to offer incentives to non-residential distribution customers to achieve reductions in electricity demand and consumption by upgrading to more energy efficient equipment for lighting, space cooling, ventilation and other measures.

Description: The Equipment Replacement Incentive Initiative (ERII) offers financial incentives to customers for the upgrade of existing equipment to energy efficient equipment. Upgrade projects can be classified as either: 1) prescriptive projects where prescribed measures replace associated required base case equipment; 2) engineered projects where energy and demand savings and incentives are calculated for associated measures; or 3) custom projects for other energy efficiency upgrades.

Targeted End Uses: Lighting, space cooling, air compressors, motors, drives, ventilation and other measures

Delivery: LDC delivered. Additional detail is available:

- Schedule C-2
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20C-2%20ERII%20Initiative.pdf and
- saveONenergy website
<https://saveonenergy.ca/Business/Program-Overviews/Retrofit-for-Commercial.aspx>

In Market Date: April 2011

Direct Install Lighting Initiative

Target Customer Type: Small Commercial, Institutional, Agricultural facilities and multi-family buildings

Initiative Frequency: Year round

Objective: The objective of this Initiative is to offer a free installation of eligible lighting and water heating measures of up to \$1,000 to eligible owners and tenants of commercial, institutional and agricultural facilities and multi-family buildings, for the purpose of achieving electricity and peak demand savings.

Description: The Direct Installed Lighting Initiative targets customers in the General Service <50kW account category. This Initiative offers turnkey lighting and electric hot water heater measures with a value up to \$1,000 at no cost to qualifying small businesses. In addition, standard prescriptive incentives are available for eligible equipment beyond the initial \$1,000 limit.

Target End Uses: Lighting and electric water heating measures

Delivery: Participants can enroll directly with the LDC, or would be contacted by the LDC/LDC-designated representative. Additional detail is available:

- Schedule C-3
<http://www.powerauthority.on.ca/sites/default/files/page/Schedule%20C-3%20Direct%20Install%20Initiative%20-%20redacted.pdf> and
- saveONenergy website <https://saveonenergy.ca/Business.aspx>

In Market Date: May 2011

Existing Building Commissioning Incentive Initiative

Target Customer Type: Commercial, Institutional, and Agricultural Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to offer incentives for optimizing (but not replacing) existing chilled water systems for space cooling in non-residential facilities for the purpose of achieving implementation phase energy savings, implementation phase demand savings, or both.

Description: This Initiative offers Participants incentives for the following:

- scoping study phase
- investigation phase
- implementation phase
- hand off/completion phase

Targeted End Uses: Chilled water systems for space cooling

Delivery: LDC delivered. Additional detail is available:

- Schedule C-6
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20C-6%20Commissioning%20Initiative.pdf and
- saveONenergy website
<https://saveonenergy.ca/Business/Program-Overviews/Existing-Building-Commissioning.aspx>

In Market Date: March 2011

New Construction and Major Renovation Initiative (HPNC)

Target Customer Type: Commercial, Institutional, Agricultural and Industrial Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to encourage builders of commercial, institutional, and industrial buildings (including multi-family buildings and agricultural facilities) to reduce electricity demand and/or consumption by designing and building new buildings with more energy-efficient equipment and systems for lighting, space cooling, ventilation and other measures.

Description: The New Construction Initiative provides incentives for new buildings to exceed existing codes and standards for energy efficiency. The Initiative uses both a prescriptive and custom approach.

Targeted End Uses: Building modeling, lighting, space cooling, ventilation and other measures

Delivery: LDC delivers to customers and design decision makers. Additional detail is available:

- Schedule C-4
<http://www.powerauthority.on.ca/sites/default/files/page/ScheduleC-4NewConstructionInitiativeV2.pdf> and
- saveONenergy website
<https://saveonenergy.ca/Business/Program-Overviews/New-Construction.aspx>

In Market Date: November 2011

Energy Audit Initiative

Target Customer Type: Commercial, Institutional, Agricultural and Industrial Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to offer incentives to owners and lessees of commercial, institutional, multi-family buildings and agricultural facilities for the purpose of undertaking assessments to identify all possible opportunities to reduce electricity demand and consumption within their buildings or premises.

Description: This Initiative provides participants incentives for the completion of energy audits of electricity consuming equipment located in their facility. Energy audits include development of energy baselines, use assessments and performance monitoring and reporting.

Targeted End Uses: Various

Delivery: LDC delivered. Additional detail is available:

- Schedule C-1
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20C-1%20Energy%20Audit%20Initiative.pdf and
- saveONenergy website
<https://saveonenergy.ca/Business/Program-Overviews/Audit-Funding.aspx>

In Market Date: March 2011

INDUSTRIAL PROGRAMS

Process & Systems Upgrades Initiative (PSUI)

Target Customer Type: Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Objectives: The objectives of this Initiative are to:

- Offer distribution customers capital incentives and enabling Initiatives to assist with the implementation of large projects and project portfolios;
- Implement system optimization projects in systems which are intrinsically complex and capital intensive; and
- Increase the capability of distribution customers to implement energy management and system optimization projects.

Description: PSUI is an energy management Initiative that includes three Initiatives: (preliminary engineering study, detailed engineering study, and project incentive Initiative). The incentives are available to large distribution connected customers with projects or portfolio projects that are expected to generate at least 350 MWh of annualized electricity savings or, in the case of Micro-Projects, 100 MWh of annualized electricity savings. The capital incentive for this Initiative is the lowest of:

- a) \$200/MWh of annualized electricity savings
- b) 70% of projects cost
- c) A one year payback

Targeted End Uses: Process and systems

Delivery: LDC delivered. Additional detail is available:

- Schedule D-1
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20D-1%20Process%20and%20Systems%20Upgrades%20Initiative.pdf and
- saveONenergy website <https://saveonenergy.ca/Business.aspx>

In Market Date: November 2011

Monitoring & Targeting Initiative

Target Customer Type: Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Objective: This Initiative offers access to funding for the installation of Monitoring and Targeting systems in order to deliver a minimum savings target at the end of 24 months and sustain the savings for the term of the M&T Agreement.

Description: This Initiative offers customers funding for the installation of a Monitoring and Targeting system to help them understand how their energy consumption might be reduced. A facility energy manager, who regularly oversees energy usage, will now be able to use historical energy consumption performance to analyze and set targets.

Targeted End Uses: Opportunities to monitor electricity consumption and demand for better real-time management

Delivery: LDC delivered. Additional detail is available:

- Schedule D-2
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20D-2%20Monitoring%20and%20Targeting%20Initiative.pdf
and
- saveONenergy website <https://saveonenergy.ca/Business.aspx>

In Market Date: November 2011

Energy Manager Initiative

Target Customer Type: Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to provide customers and LDCs the opportunity to access funding for the engagement of energy managers in order to deliver a minimum annual savings target.

Description: This Initiative provides customers the opportunity to access funding to engage an on-site, full time embedded energy manager, or an off-site roving energy manager who is engaged by the LDC. The role of the energy manager is to take control of the facility's energy use by monitoring performance, leading awareness programs, and identifying opportunities for energy consumption improvement, and spearheading projects. Participants are funded 80% of the embedded energy manager's salary up to \$100,000 plus 80% of the energy manager's actual reasonable expenses incurred up to \$8,000 per year. Each embedded energy manager has a target of 300 kW/year of energy savings from one or more facilities. LDCs receive funding of up to \$120,000 for a Roving Energy Manager plus \$8,000 for expenses.

End Uses: Individual or a grouping of customers who require additional technical resources to achieve end-use energy saving reductions

Delivery: LDC delivered. Additional detail is available:

- Schedule D-3 http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20D-3%20Energy%20Manager%20Initiative%202011-2014.pdf and
- saveONenergy website <https://saveonenergy.ca/Business.aspx>

In Market Date: November 2011

Key Account Manager Initiative

Target Customer Type: Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Description: Provide funding to employ a resource to assist in managing relationships with key accounts.

Objective: This Initiative offers LDCs the opportunity to access funding for the employment of a KAM in order to support them in fulfilling their obligations related to the PSUI. The KAM is considered to be a key element in assisting the consumer in overcoming traditional barriers related to energy management and help them achieve savings since the KAM can build relationships and become a significant resource of knowledge to the customer.

Targeted End Uses: LDC(s) who require additionally funded resources to perform sales functions

Delivery: LDC delivered. Additional detail is available:

- ScheduleD-4
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/projects_programs/pdfs/PSUI%20Initiative%20Schedule%20D-4.Key%20Account%20Manager.20110322.pdf

In Market Date: March 2012

Demand Response 3

Target Customer Type: Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Objective: This Initiative provides for Demand Response (DR) payment for service to DR-3 participants to compensate them for making available electricity demand response during a demand response event.

Description: Demand Response 3 (DR-3) is a demand response Initiative for commercial and industrial customers, of 50 kW or greater to reduce the amount of power being used during certain periods of the year. The DR-3 Initiative is a contractual resource that is an economic alternative to procurement of new generation capacity. DR-3 comes with specific contractual obligations requiring participants to reduce their use of electricity relative to a baseline when called upon. This Initiative pays participants to be on standby and energy payments for the actual energy reduction provided during a demand response event. Participants are scheduled to be on standby approximately 1,600 hours per calendar year for possible dispatch of up to 100 hours or 200 hours within that year depending on the contract.

Targeted End Uses: Qualified customers with the ability to perform load shedding/shifting.

Delivery: DR-3 is delivered by Demand Response Providers, under contract to the OPA. The OPA administers contracts with all DRPs and Direct Participants that provide in excess of 5 MW of demand response capacity. OPA provides administration including settlement, measurement and verification, and dispatch. LDCs are responsible for outreach and marketing efforts. Additional detail is available:

- Schedule D-6
http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20D-6%20Demand%20Response%203%202011-2014.pdf
and
- saveONenergy website <https://saveonenergy.ca/Business.aspx>

In Market Date: February 2011

Pre-2011 Programs Completed in 2011

Electricity Retrofit Incentive Program (ERIP)

Target Customer Type: Commercial, Institutional, and Agricultural Customers

Initiative Frequency: Year Round

Objective: This captures savings attributed to projects applied for prior to 2011 but completed in 2011.

Description: Refer to Equipment Replacement Incentive Initiative

Delivery: LDC delivered.

High Performance New Construction

Target Customer Type: Commercial, Institutional, and Agricultural Customers

Initiative Frequency: Year round

Objective: This captures savings attributed to projects applied for prior to 2011 but completed in 2011.

Description: Refer to New Construction and Major Renovation Initiative

Delivery: Delivered through OPA contracts with Enbridge and Union Gas.

7 APPENDIX B

2013 Key Evaluation Findings from the OPA

2013 KEY EVALUATION FINDINGS

CONSUMER PROGRAM

Appliance Retirement Initiative

- Per unit savings increased for both energy (+15.4%) and demand (+4.0%) between 2012 and 2013 due to a greater proportion of refrigerators/freezers with large volumes and a manufacturer date before National Appliance Energy Conservation Act (NAECA) was implemented. Dehumidifiers also show a higher per unit savings related to the change in ENERGY STAR definitions.
- Overall participation continues to decline with 20,952 appliances recycled in 2013, compared with 34,146 in 2012 and 56,110 in 2011. The program has experienced close to a 40% reduction (39.1% 2011 to 2012, 41.1% 2012 to 2013) in recycled appliances in each subsequent year of operation.
- Net to gross ratio stayed constant at around 43% between 2012 and 2013

Appliance Exchange Initiative

- Increased per unit energy and demand savings due to an adjustment to the assumed consumption of "conventional" and Energy Star dehumidifiers. The calculated weighted average annual energy savings of a exchanged dehumidifier increased 36.6%
- Of the participants surveyed who reported they had replaced the dehumidifiers they exchanged, 100% reported purchasing ENERGY STAR® models.
- 21% increase in the number of eligible dehumidifiers collected in the program. In 2013, 5,337 dehumidifier units were collected compared to 3,617 dehumidifier units and 219 window air conditioners.
- Net to Gross ratio (NTG) was 52.6% which is a slight increase of the 2012 NTG of 51.5%

Heating and Cooling Initiative

- Total participation (equipment) increased 7.5% from 2012 to 91,581.
- Per unit furnace savings decreased from 1139 kWh/yr in 2012 to 1090 kWh/yr due to a slight shift in the number of participants who use their furnace fan non-continuously both before and after the retrofit as opposed to changing from continuous to non-continuous operation
- Per unit energy and demand savings assumptions for central air conditioners did not change from 2012.

2013 KEY EVALUATION FINDINGS

Annual Coupons

- Customers redeemed more than ten times as many annual coupons in 2013 as in 2012 because of new LED coupons and full year availability of all coupons. Customers redeemed 13% more annual coupons in 2013 than in 2011, the first full year of annual coupons due to the high volume of new LED coupons.
- There was a significant reduction in savings specialty CFL related measures. In 2013, the findings showed around 30% of participants are replacing incandescent bulbs compared to 60% of participants replacing incandescent bulbs in 2012.
- Despite the significant per unit savings reductions, the Net Annual Savings from Annual Coupons in 2013 was more than 5.5 times that in 2012. This is primarily because of higher participation due to the inclusion of LED coupons and full year availability of all coupons.
- 93% of coupons redeemed in 2013 were for general purpose LEDs and specialty CFLs and LEDs, producing 89% of net annual energy savings and 84% of net demand savings.
- Measure NTG ratio was approximately 8% higher in 2013 than in 2012 due to the inclusion of participant like spillover, i.e., purchase of additional coupon initiative measures without using coupons because of program influence.

Bi-Annual Coupon Events

- 19% increase in the number of coupons redeemed during the Spring and Fall Events in 2013 compared to 2012 because of substantial increase in LED purchases with event coupons.
- 36% lower net annual savings in 2013 compared to 2012 primarily because of significant reductions in per unit savings estimates for standard and specialty CFLs. In 2013, findings showed a decrease in replacement rate of incandescent bulbs. Only 30% of 2013 participants are estimated to have replaced incandescent bulbs compared to 60% of participants replacing incandescent bulbs in 2012. This leads to a change in the baseline assumption for the savings calculations.
- 87% of coupons redeemed were for general purpose and specialty CFLs and LEDs, producing 80% of net annual energy savings and 73% of net demand savings
- Measure NTG ratio was approximately 8% higher in 2013 than in 2012 due to the inclusion of participant like spillover, i.e., purchase of additional coupon initiative measures without using coupons because of program influence.

peaksaverPLUS

- The cycling strategy for CAC load control was changed from 50% simple cycling to 60% simple cycling.
- Under 1-in-10 year weather conditions, the 2013 estimated impacts for load control devices are higher than the 2012 estimates in all months and are between 10 and 15% higher during the core summer months of June through August.
- Load impact estimates for the average small and medium business and for electric water heaters among residential customers are also unchanged from the prior year's analysis
- This year's IHD analysis has yielded an estimate of no statistically significant energy savings.

2013 KEY EVALUATION FINDINGS

Residential New Construction

- Energy and demand savings for the Initiative increased by 300% compared to the combined 2011 and 2012 results ; number of projects also increased from 45 in 2011 and 2012 to 86 in 2013.
- All projects are opting for the prescriptive or performance path. No custom project applications were received in 2013, similar to 2011-2012 .
- Net-to-gross ratio for the initiative was higher by 14% from 49% in 2012 to 63% in 2013.

HOME ASSISTANCE PROGRAM

Home Assistance Program

- Participation increased significantly to 26,756 participants in 2013 from 5,033 in 2012
- Realization rates were slightly lower in 2013 (0.88 for kWh and 0.26 for kW) than in 2012 (0.98 for kWh and 0.32 for kW) primarily due to updated verified per unit assumptions .
- Realization rate for demand savings remained low as FAST Tool calculated kW savings for certain insulation measures remained very high and recommended revisions to kW savings factors were not yet in use in 2013 (changes to the FAST Tool to address these issues were made in early 2014)

BUSINESS PROGRAM

Retrofit

- A total of 8,785 projects completed in 2013. Reported energy savings for individual projects ranged from 1 kWh to over 5,000,000 kWh
- Net to Gross ratio (NTG) for energy was 72.8%, consistent with prior years
- NTG for demand was 72.0%, consistent with prior years
- NTG ratios are comparable to similar programs across North America

2013 KEY EVALUATION FINDINGS

Small Business Lighting

- In 2013 the initiative introduced: a) an increase in the incentive to \$1500 from \$1000, b) new LED measures c) Agribusiness eligibility, resulting in the stabilization of participation and an increase in savings.
- 17,782 projects completed in 2013 (3.8% decrease from 2012)
- However, 12.2% increase in Net Verified Energy Savings relative to 2012.
- The average incentive per project and savings per project both increased between 2012 to 2013
- Net to Gross ratio (NTG) for 2013 remained unchanged at 94%

Audit Funding

- 319 audits were completed in 2013
- 2013 sample saw more recommended measures implemented without incentives (33% in 2013 vs. 13% in 2012)
- The average per audit summer peak demands savings is estimated to be 13 kW.

Existing Building Commissioning

- 29 unique participants in the 2013 population
- No Commissioning projects completed the hand-off/completion phase in 2013
- Improvements to the chilled water system controls were the most commonly targeted measure.
- Large variation in estimated savings results between preliminary investigation phase and actual implementation phase

High Performance New Construction

- Number of projects increased by 25% from 69 in 2012 to 86 in 2013.
- Custom projects, representing only about 8% of the total number of projects, account for 67% of verified demand savings and 54% of verified energy savings.
- A realization rate of 72% for energy savings is low due to the low realization rate of the Agribusiness high ventilation, low speed fans which comprised of 15 % of the HPNC prescriptive project energy savings.
- Net-to-gross ratio for the initiative was higher by 5% from 49% in 2012 to 54% in 2013.

2013 KEY EVALUATION FINDINGS

INDUSTRIAL PROGRAM

Process and Systems Upgrade Initiative

- In 2013, three PSUI projects were put into service. Projects were very well documented and technical reviews were thorough. Most projects are delivering the level of energy savings expected or more (realization rates of 87% for energy savings and 86% for summer demand savings)
- Good level of quality on M&V conducted in each project. The level of free-ridership was found to be very low, at only 7% for energy savings and 6% for demand savings, and no spillover was identified.
- Energy Managers are seen as important drivers of program enabled savings projects. Almost a 300% increase vs. 2012 in the amount of energy savings from program enabled savings projects.

DR-3

- The largest 20 contributors account for 60% of the contractual demand reduction – in other words, less than 5% of contributors account for the majority of the load reductions.
- In 2013, DR-3 was successfully dispatched locally for the first time in order to provide assistance in restoring power after a prolonged power outage due to substation flooding.

Note:

The Key Evaluation findings are derived from the 2013 evaluations of the saveONenergy programs. These findings were developed by 3rd party evaluation contractors. Complete findings are detailed in the contractors' full evaluation reports, which will be available publicly in Q4 2014.