



CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

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**CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.**

Electricity Distributor Licence ED-2002-0574

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Conservation and Demand Management

**2014 ANNUAL REPORT**

Submitted to:

**Ontario Energy Board**

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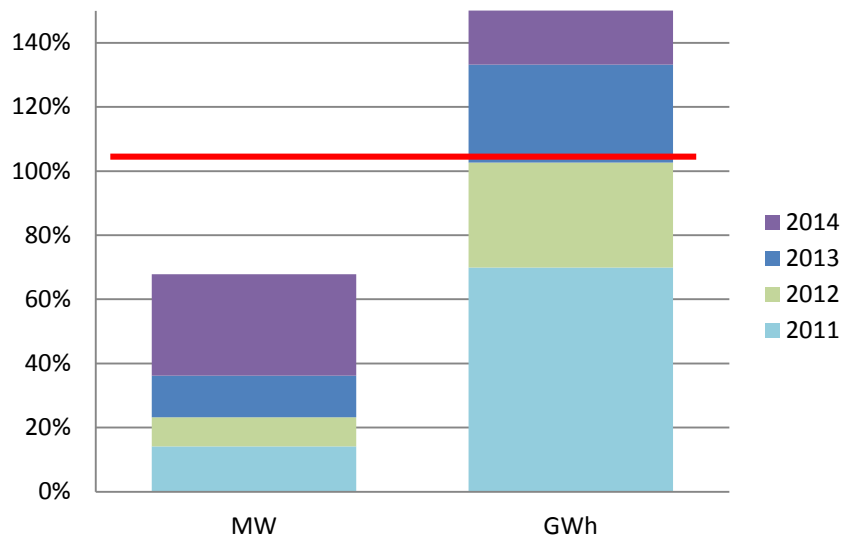
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## Executive Summary

2014 represented the fourth and last year of Conservation and Demand Management (CDM) programs delivered under the Ontario Energy Board (OEB) CDM Code (Board File No. EB-2010-2015). The CDM Code required 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 CND's achievement towards those targets, including activities undertaken to increase participation rates. The four year cumulative achievements toward target are summarized in the chart below.

### Contributions to 2014 Target



CND is pleased to report that their GWh energy reduction target for 2014 was achieved in 2012 and contributions from 2013 and 2014 further exceeded target. As with many other Local Distribution Companies (LDCs) the demand target (MW) proved 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.

Based on a successful collaborative model established in past years, CND continued to strengthen a shared delivery model with its neighbouring LDCs Kitchener-Wilmot Hydro Inc. and Waterloo North Hydro Inc. The joint approach proved 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 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 to the OEB 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 fourth and final Annual Report produced by CNL and it has been prepared in accordance with the Code requirements and covers the period from January 1, 2014 to December 31, 2014.

On December 21, 2012, the Minister of Energy directed the Independent Electricity Systems Operator ("IESO" formerly Ontario Power Authority) to fund CDM programs which meet the definition and criteria for IESO-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.

In 2014, LDCs collectively achieved approximately 24% of the energy savings (GWh) target, adding to the overall cumulative result of approximately 109% of the net energy target of 6,000 GWh. Provincial results echo the same struggle seen by CNL to achieve the demand target. Final LDC collective results toward the MW target was 70%.

# 1 Conservation Framework

## 1.1 2011-2014 Framework

The 2011-2014 Conservation Framework was 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 recognized 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. This framework was intended to enable customers to benefit from a suite of both Board-Approved and IESO Province-Wide programs and be a portfolio that would meet both broad and specific customer needs.

The state of Board-Approved programs and the 2011-2014 Province-Wide IESO programs limited CDM offerings to customers. This produced limited savings and restricted the associated opportunity for LDCs to meet their targets. The process to introduce changes to current program Initiatives or to pilot new Initiatives proved challenging, taking considerable cost and effort for LDCs who pursued this track.

## 1.2 Conservation First Framework

LDCs are supportive of the Government's renewed commitment for CDM in Ontario. LDCs are committed to working with the Government, IESO, Natural Gas Utilities and other stakeholders to develop programs for the new framework for CDM in the Province.

Long-term commitment for CDM funding and confirmation of the role of LDCs have been provided in the Minister's directive dated March 31, 2014, allowing LDCs to maintain current program infrastructure, including LDC staff and third party contracts as required.

The commitment also provided LDCs the program extensions required for continuity into the Conservation First Framework which was critical for all customers.

## 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, IESO-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 IESO for the province, and then allocated to distributors.

In 2013, the IESO retained the Brattle Group as the evaluation contractor and has been working with an expert panel convened to provide advice on methodology, data collection, models, savings allocation, etc. The initial evaluations were conducted in 2013 with five LDCs – Hydro One Networks Inc., Toronto Hydro-Electric System Limited, Hydro Ottawa Limited, Thunder Bay Hydro Electricity Distribution Inc. and Newmarket-Tay Power Distribution Ltd. 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 IESO website. Preliminary results demonstrated load shifting behaviours from the residential customer class. Three additional LDCs were added to the study in 2014, Cambridge and North Dumfries, Powerstream and Sudbury. Verified results from this evaluation were included in the final 2014 report from the IESO.

#### 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 Effective Date	Rates (cents/kWh)		
	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
November 1, 2014	14.0	11.4	7.7

**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 31<sup>st</sup>, 2014, 100% of CND’s RPP customers were on TOU billing.

### 2.3 CND’s Application with the OEB

In 2013, the IESO introduced the Conservation Fund’s Program Innovation stream to support the development and launch of new local, regional and province-wide initiatives. The Conservation Fund’s LDC Program Innovation stream fast-tracks LDC-led program design and the launch of successfully piloted initiatives prior to full scale deployment.

By driving program innovation through the Conservation Fund, LDCs have the opportunity to both realize additional savings through the piloting and implementation of initiatives not currently addressed by the IESO portfolio and the means to test concepts for future local or province wide programs post 2014.

In 2014 CND was successful in executing a Program Innovation pilot contract with the IESO. The pilot provided funding until Dec. 31, 2015 for the installation of residential demand response smart thermostats through Nest Labs. As of Dec. 31, 2014 the pilot had over 1,000 participants enrolled.

### 3 IESO-Contracted Province-Wide CDM Programs

#### 3.1 Introduction

Effective February 17, 2011, CND entered into an agreement with the IESO 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**

<b>Initiative</b>	<b>Schedule</b>	<b>Date schedule posted</b>	<b>Customer Class</b>
<b>Consumer Programs</b>			
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
<b>Commercial &amp; Institutional Programs</b>			
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
<b>Industrial Programs</b>			
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
<b>Home Assistance Program</b>			
Home Assistance Program	Schedule E-1	May 9, 2011	All residential rate classes
<b>Pre-2011 Programs</b>			
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 IESO-Contracted Province Wide program portfolio that have been removed from the Schedule, were not offered by CND or were not released to market as of December 31, 2014.

**Table 2: CDM Programs Not in Market**

<b>Initiative Not in Market in 2014</b>	<b>Objective</b>	<b>Status</b>
<b>Consumer Programs</b>		
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 IESO and results are attributed to LDCs for reporting.	Launched in 2013 by IESO in select areas not including CND.
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.
<b>Commercial &amp; Institutional Programs</b>		
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
<b>Industrial Programs</b>		
DR1	This Initiative allows distribution customers to voluntarily reduce electricity demand during certain	No customer uptake for this Initiative. As a result this

	periods of the year pursuant to the DR1 contract. The Initiative provides DR payment for service for the actual electricity reduction provided during a demand response event.	Initiative was removed from the Schedule in Q4, 2012.
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The Master CDM Program Agreement includes program change management provision in Article 3. Collaboration between the IESO and the LDCs commenced in 2011, and continued in 2012, 2013 and 2014, as the change management process was implemented to enhance the IESO-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 IESO-Contracted Province-Wide CDM Program descriptions are available on the IESO'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 2013 had a positive impact on customer participation. There was the added benefit of a full suite of LDC custom coded coupon options for LDCs to utilize. Energy savings from this initiative surpassed the Heating & Cooling Initiative for the first time as well.

The Residential Program Portfolio was predominately a carryover of initiatives from previous programs. Three new initiatives were never launched and subsequently removed from the schedule in 2013 with no new additions. Delays in communication with regards to initiative offerings and results reporting hampered LDCs' ability to engage customers and promote participation.

**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 2014 with the hiring of a third 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 2014.

- Print materials such as posters, banners, brochures, bill inserts have been utilized at community events, City of Cambridge office, CND office and elsewhere.
- Media advertising at Cineplex movie theatre.
- Advertising with the Cambridge Times included newsprint, special edition magazines, newspaper inserts and online advertisements.
- Advertising with The Waterloo Region Record included newsprint, special edition magazines and online advertisements.

- Sponsorship for the 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-style videos were posted to a youtube.com channel and have received more than 90,000 views to date combined.

**3.2.1.1 Appliance Retirement Initiative (Exhibit D)**

**Initiative Activities/Progress:**

Unit	Incremental Activity	Incremental kW	Incremental kWh
Appliances	83	5	36,516

**Additional Comments:**

- 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.
- This program concluded December 31, 2014.

### 3.2.1.2 Appliance Exchange Initiative (Exhibit E)

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Appliances	53	11	19,580

#### Additional Comments:

- To date there has only been one retailer participant in the Appliance Exchange Initiative.
- Evaluation, Measurement, and Verification (EMV) results indicated that the value of savings for retired room air conditioner (AC) dropped resulting in the retail participant not accepting window ACs. Dehumidifiers were the only eligible measure.

### 3.2.1.3 Heating & Cooling Incentives Initiative (Exhibit B)

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Equipment	1,697	328	603,250

#### 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 and continued through 2014 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 central air conditioner sales to eligible units.
- HVAC contractors have stressed the importance of timeliness of the incentive process to maintain a positive relationship between participants, contractors, the IESO and the participating LDC.
- There are cases where non-participating contractors are offering their own incentives (by discounting their installations to match value of the IESO 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	10,539	21	286,647

#### 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 printed and mailed out in the first half of 2014. This accounts for the significant increase to participation, along with updated LED measures.
- All coupons have been provided with LDC custom coding in 2014 which allows LDCs to promote coupons based on local preferences.



### 3.2.1.5 Bi-Annual Retailer Event Initiative (Exhibit C)

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Items	46,209	77	1,177,103

#### Additional Comments:

- This Initiative is strongly influenced by the retail participants and has no direct involvement from the LDCs.
- Program evolution, including new products and review of incentive pricing for the coupon Initiatives should be a regular activity to ensure continued consumer interest.
- 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	18	4	22,425

#### 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.
- 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.
- Performance enhancements were made in 2014 to allow Energy Star homes to qualify for incentives which improved provincial.
- CND contracted the services of a third party to engage builders in 2014 and saw 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	473	167	0

#### 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.

In July 2014, through an IESO Conservation Fund pilot, CND launched a new residential demand response offer using Nest Learning Thermostats. Results from that pilot are attributed under the pilot line of the report and are not reflected in the data above.

#### 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.
- As identified in the IESO'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.

### 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.

**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 2014.

- Joint delivery of nine breakfast events focused on specific opportunities and end-uses.
- An executive luncheon was attended by 200+ community leaders from across the Waterloo Region. David Chilton (author of The Wealthy Barber series and featured on CBC's Dragon's Den) was the keynote speaker and touched on the value of investing in your own organization.
- 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 studies<sup>1</sup> on projects completed in the ERII and Direct Install Lighting program to showcase technology and participants and motivate others to do the same.
- Postcard sized mailers went out to G<50kW customers promoting the Direct Install Lighting program and showcasing three local business who've made improvements.
- Recognition of prior year participants in a newspaper advertisement (Cambridge Times) and jointly with Kitchener-Wilmot Hydro and Waterloo North Hydro in The Record.

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<sup>1</sup> The videos can be viewed on a joint [youtube.com](https://www.youtube.com) webpage.

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

#### Initiative Activities/Progress:

#### Additional Comments:

Unit	Incremental Activity	Incremental Net kW	Incremental Net kWh
Projects	148	1,818	13,491,681

- A large proportion of LDC savings are attributed to ERII.
- Capability building programs offered by the IESO 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 applications 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. CND has been the lead on two Head Office applications.
- Streamlining of the settlements systems resulted in significant improvement in the payment process in 2013.

### 3.2.2.2 Direct Install Initiative (DIL) (Schedule C-3)

**Initiative Activities/Progress:**

**Additional Comments:**

Unit	Incremental Activity	Incremental kW	Incremental kWh
Projects	84	111	383,422

- 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.
- A bulk metered location was retrofitted in 2014 which increased activity significantly.

### 3.2.2.3 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.



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

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Buildings	2	5	18,778

#### 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.

### 3.2.2.5 Energy Audit Initiative

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Audits	3	40	195,821

#### Additional Comments

- 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.

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

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Projects	1	151	1,318,000

#### 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 IESO 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.

### 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 as of December 31, 2014.

#### 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	22	78	430,152

#### 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 2014:

- Embedded Energy Manager:
  - One active EEM was renewed in 2014 (shared with Peterborough Utilities)
  - One approved EEM was hired mid-year and delivered savings in 2014
  - One municipal EEM was hired in 2014 (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.
- 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 received KAM funding in 2012 and 2013 but did not renew in 2014. 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	9	1,006	0

#### 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.



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

#### Initiative Activities/Progress:

Unit	Incremental Activity	Incremental kW	Incremental kWh
Homes	252	5	91,897

#### 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 2014 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. Most of the easy opportunities with social housing organizations were completed in prior years.

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 proved beneficial in 2013 and 2014.
- 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 2014 LDC CDM Results

The following Tables were provided by the IESO and represent the final net verified CDM results for CND in 2014.

Table 3: Cambridge and North Dumfries Hydro Inc. Initiative and Program Level Net Savings by Year

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)
		2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014
<b>Consumer Program</b>															
Appliance Retirement	Appliances	440	175	98	83	24	9	6	5	175,906	67,918	42,616	36,516	45	1,028,921
Appliance Exchange	Appliances	23	25	51	53	2	4	11	11	2,690	6,491	18,841	19,580	26	86,144
HVAC Incentives	Equipment	978	1,115	1,427	1,697	359	248	285	328	670,601	428,617	489,074	603,250	1,220	5,549,652
Conservation Instant Coupon Booklet	Items	4,891	296	3,332	10,539	11	2	5	21	179,901	13,391	73,819	286,647	39	1,194,066
Bi-Annual Retailer Event	Items	9,119	10,161	9,049	46,209	16	14	11	77	281,459	256,502	164,540	1,177,103	119	3,401,526
Retailer Co-op	Items	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential Demand Response	Devices	82	0	131	473	46	0	50	167	0	0	129	0	167	129
Residential Demand Response (IHD)	Devices	0	0	0	334	0	0	0	0	0	0	0	0	0	0
Residential New Construction	Homes	0	0	0	18	0	0	0	4	0	0	0	22,425	4	22,425
<b>Consumer Program Total</b>						<b>458</b>	<b>277</b>	<b>369</b>	<b>614</b>	<b>1,310,556</b>	<b>772,919</b>	<b>789,021</b>	<b>2,145,522</b>	<b>1,620</b>	<b>11,282,863</b>
<b>Business Program</b>															
Retrofit	Projects	23	121	161	148	256	1,203	1,377	1,818	1,336,743	6,206,217	7,268,169	13,491,681	4,625	51,859,650
Direct Install Lighting	Projects	123	108	39	84	158	95	54	111	398,982	356,510	188,436	383,422	388	3,341,957
Building Commissioning	Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Construction	Buildings	0	1	2	2	0	0	60	5	0	0	337,062	18,778	66	692,903
Energy Audit	Audits	0	1	4	3	0	5	26	40	0	25,176	145,352	195,821	72	562,054
Small Commercial Demand Response	Devices	1	0	1	0	1	0	1	0	0	0	1	0	0	1
Small Commercial Demand Response (IHD)	Devices	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demand Response 3	Facilities	3	3	4	3	180	180	346	136	7,018	2,621	5,215	0	136	14,854
<b>Business Program Total</b>						<b>595</b>	<b>1,483</b>	<b>1,864</b>	<b>2,110</b>	<b>1,742,744</b>	<b>6,590,523</b>	<b>7,944,236</b>	<b>14,089,702</b>	<b>5,286</b>	<b>56,471,419</b>
<b>Industrial Program</b>															
Process & System Upgrades	Projects	0	0	0	1	0	0	80	151	0	0	691,097	1,318,000	230	2,700,194
Monitoring & Targeting	Projects	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Manager	Projects	0	2	10	22	0	0	33	78	0	0	175,934	430,152	89	638,332
Retrofit	Projects	22	0	0	0	466	0	0	0	3,083,118	0	0	0	466	12,332,473
Demand Response 3	Facilities	6	7	4	6	544	705	525	870	31,908	16,979	11,952	0	870	60,838
<b>Industrial Program Total</b>						<b>1,009</b>	<b>705</b>	<b>637</b>	<b>1,098</b>	<b>3,115,026</b>	<b>16,979</b>	<b>878,983</b>	<b>1,748,152</b>	<b>1,655</b>	<b>15,731,836</b>
<b>Home Assistance Program</b>															
Home Assistance Program	Homes	0	33	1,057	252	0	1	31	5	0	11,421	458,390	91,897	37	1,040,249
<b>Home Assistance Program Total</b>						<b>0</b>	<b>1</b>	<b>31</b>	<b>5</b>	<b>0</b>	<b>11,421</b>	<b>458,390</b>	<b>91,897</b>	<b>37</b>	<b>1,040,249</b>
<b>Aboriginal Program</b>															
Home Assistance Program	Homes	0	0	0	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	0	0	0
<b>Aboriginal Program Total</b>						<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Pre-2011 Programs completed in 2011</b>															
Electricity Retrofit Incentive Program	Projects	64	0	0	0	1,191	0	0	0	6,710,956	0	0	0	1,191	26,843,823
High Performance New Construction	Projects	2	0	2	0	11	1	0	0	57,223	1,049	0	0	12	232,038
Toronto Comprehensive	Projects	0	0	0	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	0	0	0
LDC Custom Programs	Projects	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pre-2011 Programs completed in 2011 Total</b>						<b>1,202</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6,768,179</b>	<b>1,049</b>	<b>0</b>	<b>0</b>	<b>1,203</b>	<b>27,075,862</b>
<b>Other</b>															
Program Enabled Savings	Projects	0	4	5	10	0	0	8	46	0	0	51,500	345,824	54	448,824
Time-of-Use Savings	Homes	0	0	0	n/a	0	0	0	728	0	0	0	0	728	0
LDC Pilots	Projects	0	0	0	1,157	0	0	0	624	0	0	0	461,513	624	461,513
<b>Other Total</b>						<b>0</b>	<b>0</b>	<b>8</b>	<b>775</b>	<b>0</b>	<b>0</b>	<b>51,500</b>	<b>345,824</b>	<b>1,406</b>	<b>910,337</b>
<b>Adjustments to 2011 Verified Results</b>															
<b>Adjustments to 2012 Verified Results</b>															
<b>Adjustments to 2013 Verified Results</b>															
<b>Energy Efficiency Total</b>						<b>2,494</b>	<b>1,582</b>	<b>1,988</b>	<b>4,053</b>	<b>12,897,579</b>	<b>7,373,292</b>	<b>10,104,833</b>	<b>18,882,610</b>	<b>10,034</b>	<b>112,436,744</b>
<b>Demand Response Total (Scenario 1)</b>						<b>770</b>	<b>885</b>	<b>921</b>	<b>1,173</b>	<b>38,926</b>	<b>19,599</b>	<b>17,297</b>	<b>0</b>	<b>1,173</b>	<b>75,822</b>
<b>Adjustments to Previous Years' Verified Results Total</b>						<b>0</b>	<b>63</b>	<b>302</b>	<b>340</b>	<b>0</b>	<b>517,468</b>	<b>830,319</b>	<b>1,354,186</b>	<b>705</b>	<b>7,969,873</b>
<b>OPA-Contracted LDC Portfolio Total (inc. Adjustments)</b>						<b>3,264</b>	<b>2,530</b>	<b>3,211</b>	<b>5,566</b>	<b>12,936,504</b>	<b>7,910,359</b>	<b>10,952,449</b>	<b>20,236,797</b>	<b>11,912</b>	<b>120,482,439</b>
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).												*Includes adjustments after Final Reports were issued			
Results presented using scenario 1 which assumes that demand response resources have a												Full OEB Target:			
												17,680			
												73,660,000			
												67.4%			
												163.6%			

**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	0.95	2.23	0.61	2.15	1.62	11.28
Business Program Total	2.85	19.15	2.11	14.10	5.29	56.47
Industrial Program Total	1.12	1.80	1.10	1.75	1.66	15.73
Home Assistance Program Total	0.01	0.09	0.01	.09	0.01	1.00
Pre-2011 Programs completed in 2011 Total	0.00	0.00	0.00	0.00	1.20	27.08
Other	1.40	0.81	1.40	0.81	1.40	0.91
<b>Total IESO Contracted Province-Wide CDM Programs</b>	<b>6.81</b>	<b>26.15</b>	<b>5.56</b>	<b>20.24</b>	<b>11.91<sup>2</sup></b>	<b>120.48<sup>2</sup></b>

<sup>2</sup> 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 IESO's 2014 Evaluation reports can be found in Appendix B. This information was taken from the LDC Extranet in a document posted on September 15, 2015 titled: 2014 Key Evaluation Findings.

## 4.2 Spending

Table 5: 2014 Spending by Initiative

Initiative	Program Administration Budget (PAB)	Participant Based Funding (PBF)	Participant Incentives (PI)	Capability Building Funding (CBF)	TOTAL
<b>Consumer Program</b>					
Appliance Retirement	\$22,936.15	\$0	\$0	\$0	\$22,936.15
Appliance Exchange	\$0	\$0	\$0	\$0	\$0
Heating & Cooling Incentives	\$198,153.59	\$0	\$0	\$0	\$198,153.59
Coupon & Retailer Program	\$79,459.15	\$0	\$0	\$0	\$79,459.15
Residential Demand Response	\$46,598.42	\$76,070.00	\$0	\$0	\$122,668.73
New Construction Program	\$33,994.57	\$0	\$0	\$0	\$33,994.57
<b>Business Program</b>					
Efficiency: Equipment Replacement Initiative	\$241,558.97	\$0	\$1,368,600.61	\$0	\$1,610,159.58
Direct Installed Lighting	\$145,133.60	\$20,252.00	\$139,024.50	\$0	\$304,410.10
Existing Building Commissioning Incentive	\$0	\$0	\$0	\$0	\$0
New Construction and Major Renovation Initiative	\$125,383.07	\$0	\$117,133.06	\$0	\$242,516.13
Energy Audit	\$76,171.57	\$0	\$2,357.70	\$0	\$78,529.27
<b>Industrial Program</b>					
Process & System Upgrades	\$67,063.99	\$0	\$2,599,382.00	\$0	\$2,666,445.99
a) preliminary engineering study	\$3,193.96	\$0	\$19,958.00	\$0	\$23,151.96
b) detailed engineering study	\$26,935.01	\$0	\$148,768.00	\$0	\$175,703.01
c) program incentive	\$36,935.01	\$0	\$2,430,656.00	\$0	\$2,467,591.01
Monitoring & Targeting	\$0	\$0	\$0	\$0	\$0
Energy Manager	\$2,997.33	\$0	\$103,903.16	\$0	\$106,900.49
Key Account Manager ("KAM")	\$0	\$0	\$0	\$0	\$0
Demand Response	\$4,201.85	\$0	\$0	\$0	\$4,201.85
<b>Home Assistance Program</b>					
Home Assistance Program	\$53,326.03	\$0	\$103,760.60	\$0	\$157,086.63
<b>TOTAL SPENDING</b>	<b>\$1,096,978.30</b>	<b>\$96,322.31</b>	<b>\$7,033,543.63</b>	<b>\$0</b>	<b>\$8,226,844.24</b>

**Table 6: Cumulative Spending (2011-2014)**

<b>Initiative</b>	<b>Program Administration Budget (PAB)</b>	<b>Participant Based Funding (PBF)</b>	<b>Participant Incentives (PI)</b>	<b>Capability Building Funding (CBF)</b>	<b>TOTAL</b>
<b>Consumer Program</b>					
Appliance Retirement	\$238,847.50	\$0	\$0	\$0	\$238,847.50
Appliance Exchange	\$4,212.15	\$0	\$0	\$0	\$4,212.15
Heating & Cooling Incentives	\$515,453.99	\$0	\$0	\$0	\$515,453.99
Coupon & Retailer	\$239,618.25	\$0	\$0	\$0	\$239,618.25
Residential Demand Response	\$166,164.45	\$120,215.31	\$0	\$0	\$286,379.76
New Construction Program	\$40,596.25	\$0	\$0	\$0	\$40,596.25
<b>Business Program</b>					
Efficiency: Equipment Replacement Initiative	\$749,917.10	\$0	\$3,603,579.87	\$0	\$4,353,496.97
Direct Installed Lighting	\$234,020.83	\$84,912.00	\$414,901.00	\$0	\$733,833.83
Existing Building Commissioning Incentive	\$0	\$0	\$0	\$0	\$0
New Construction	\$153,022.59	\$0	\$117,133.06	\$0	\$270,155.65
Energy Audit	\$139,473.34	\$0	\$15,540.80	\$0	\$155,014.14
<b>Industrial Program</b>					
Process & System Upgrades	\$101,228.66	\$0	\$2,689,276.40	\$0	\$2,790,505.06
a) preliminary engineering study	\$9,214.44	\$0	\$19,958.00	\$0	\$29,172.44
b) detailed engineering study	\$43,809.94	\$0	\$148,768.00	\$0	\$192,577.94
c) program incentive	\$48,204.27	\$0	\$2,430,656.00	\$0	\$2,478,860.27
Monitoring & Targeting	\$1,289.69	\$0	\$0	\$0	\$1,289.69
Energy Manager	\$23,420.08	\$0	\$207,161.01	\$0	\$230,581.09
Key Account Manager ("KAM")	\$12,248.90	\$0	\$0	\$0	\$12,248.90
Demand Response 3	\$15,582.63	\$0	\$0	\$0	\$15,582.63
<b>Home Assistance Program</b>					
Home Assistance Program	\$118,700.39	\$0	\$383,777.48	\$0	\$502,477.87
<b>Pre 2011 Programs</b>					
Electricity Retrofit Incentive Program	\$0	\$0	\$0	\$0	\$0
High Performance New Construction	\$0	\$0	\$0	\$0	\$0
<b>Initiatives Not In Market</b>					
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
<b>TOTAL Province-wide CDM PROGRAMS</b>	<b>\$2,855,025.47</b>	<b>\$205,127.00</b>	<b>\$10,058,636.62</b>	<b>\$0</b>	<b>\$13,090,904.40</b>

## 5 Combined CDM Reporting Elements

### 5.1 Progress Towards CDM Targets

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

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

Implementation Period	Annual (MW)			
	2011	2012	2013	2014
2011 – Verified by IESO	3.3	2.5	2.5	2.5
2012 – Verified by IESO	0.1	2.5	1.6	1.6
2013 – Verified by IESO	0.0	0.3	3.2	2.3
2014– Verified by IESO	0.0	0.1	0.3	5.6
<b>Verified Net Annual Peak Demand Savings in 2014:</b>				<b>11.9</b>
<b>CND 2014 Annual CDM Capacity Target:</b>				<b>17.7</b>
<b>Verified Peak Demand Savings Target Achieved (%):</b>				<b>67.4%</b>

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

Implementation Period	Annual (GWh)				Cumulative (GWh) 2011-2014
	2011	2012	2013	2014	
2011 – Verified by IESO	12.9	12.9	12.9	12.8	51.5
2012 – Verified by IESO	0.5	7.9	7.9	7.8	24.1
2013 – Verified by IESO	0.0	0.8	11.0	10.8	22.5
2014– Verified by IESO	0.1	0.6	1.35	20.2	22.3
<b>Verified Net Cumulative Energy Savings 2011-2014:</b>					<b>120.5</b>
<b>CND 2011-2014 Cumulative CDM Energy Target:</b>					<b>73.7</b>
<b>Verified Cumulative Energy Target Achieved (%):</b>					<b>163.6%</b>

## 6 CONCLUSION

Over the course of 2014, CND achieved an incremental 5.6 MW in peak demand savings and 20.2 GWh in energy savings, which represents 32% and 28% of CND's 2014 targets, respectively. Increased focus on demand saving nearly doubled the contribution from the prior three years, including results from TOU and the LDC approved pilot.

Had there not been significant delays in the approval of a PSUI Capital Incentive Agreement, CND would have achieved its 2014 demand target. The project was delayed 18 months and is now expected to complete in November, 2015.

The overall results achieved in 2011-2014 are 11.9 MW in peak demand savings and 120.5 GWh in energy savings, which represents 67.4% and 163.6% of CND's 2014 target, respectively. These results are representative of a considerable effort expended by CND, in cooperation with other LDCs, customers, channel partners and stakeholders to overcome many operational and structural issues that limited program effectiveness across all market sectors. This achievement is a success and the relationships built within the 2011-2014 CDM program term will serve as a solid foundation for the launch of the Conservation First Framework in 2015.

Future reports on Conservation First will be provided by LDCs to the IESO who will report annually to the OEB.

## **7 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:** IESO 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](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:** IESO 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](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:** IESO 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](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](http://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 IESO 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 IESO 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](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 IESO enters into arrangements with participating retailers to promote the discounted products, and to post and honour related coupons. LDCs also refer retailers to the IESO. 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](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 IESO 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](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

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**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](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](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](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](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](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](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](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](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 IESO. The IESO administers contracts with all DRPs and Direct Participants that provide in excess of 5 MW of demand response capacity. IESO 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%202011-2014.pdf](http://www.powerauthority.on.ca/sites/default/files/new_files/industry_stakeholders/current_electricity_contracts/pdfs/Schedule%20D-6%20Demand%20Response%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 IESO contracts with Enbridge and Union Gas.



## **8 APPENDIX B**

### **2014 Key Evaluation Findings from the IESO**

# 2014 KEY EVALUATION FINDINGS

## CONSUMER PROGRAM

### Appliance Retirement Initiative

- Participation increased slightly to 22,563 (7.7%) in 2014 compared with 20,952 in 2013.
- Since 2011 overall Initiative participation has decreased nearly 60%.
- The greatest decrease was seen in the number of refrigerators collected year-over-year
- Of appliances collected, refrigerators and freezers remain the most dominate measures accounting for 90%. However, window AC units and dehumidifiers saw a marked increase of 29.6% and 27% respectively in 2014.
- Net to gross ratio (NTG) increased slightly to 47% compared to 43% as reported for 2013 and 2012 program years.

### Appliance Exchange Initiative

- Participation in 2014 increased by 6.5% to 5,685 appliances from 5,337 compared to 2013
- Per-unit savings has increased by 36.6% as ENERGY STAR criteria increases and more participants purchase ENERGY STAR replacements appliances. This resulted in a 6.5% increase in Net Energy & Demand savings.
- Net to Gross ratio (NTG) remained unchanged from 2013 at 52.6%

### Heating and Cooling Initiative

- In 2014 net savings increased by 20% from 2013 and overall participation increased by 17% to 113,002 compared to 2013
- The ECM measure has remained the dominant source of savings since 2011
- Per unit furnace savings increased 12.7% due to a shift in the number of participants who use their furnace fan continuously both before and after the retrofit.
- Per unit energy and demand savings assumptions for central air conditioners decreased by 56% due to reduced run hours
- Net to Gross ratio (NTG) remained unchanged from 2013 at 48%

# 2014 KEY EVALUATION FINDINGS

## Annual Coupons

- Customers redeemed more than five times as many annual coupons in 2014 as in 2013. In total, approximately 500,000 Annual Coupons were redeemed in 2014 with 110,000 being LDC Coded Coupons.
- There was a further reduction in savings for lighting measures from changes in the baseline due to the phase out of 72W and 100W incandescent bulbs.
- Despite the significant per unit savings reductions for lighting measure, the Net Annual Savings from Annual Coupons in 2014 was more than six times that in 2013. This is primarily because of higher participation and the inclusion of LED coupons and full year availability of all coupons.
- Measured NTG ratios grew significantly in 2014. The NTG ratio is 53% higher in 2014 than in 2013 due to the inclusion of participant spillover, i.e., purchase of additional coupon initiative measures and general energy efficient measures without the use of a coupon but influenced by the coupon program.

## Bi-Annual Coupon Events

- Over 2.5 million coupons were redeemed in 2014 compared with 2013 redemptions
- The Bi-Annual Coupon Event saw a substantial increase in the number of coupons redeemed during the Spring and Fall Events in 2014 compared to 2013. The increase can be linked to a substantial increase in LED purchases with event coupons accounting for 84% of all Bi-Annual Coupons redeemed.
- Reductions in per unit savings were overshadowed by the increase in coupon redemptions. Overall savings increased by approximately 85% in 2014 compared with 2013 Demand and Energy Savings.
- Similar to the Annual Coupon Event measured NTG ratios rose by 53% compared to 2013 NTG ratios. The rise is due to the inclusion of participant spillover, i.e., purchase of additional coupon initiative and general energy efficient measures without the use of a coupon but influenced by the Bi-Annual Coupon event.

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- There were an additional 55,000 CAC load control devices enrolled in the program in 2014 relative to 2013, which increased the capacity of the residential segment of the program from 129 MW in 2013 to 143 MW in 2014.
- Ex-ante impacts on a per device basis were lower than 2013 average.
- There were no energy savings in 2014 because there were no system-wide events were called.
- Load impact estimates for the average small and medium business and for electric water heaters among residential customers remain consistent with prior year's analysis
- IHD's yielded no statistically significant energy savings.

# 2014 KEY EVALUATION FINDINGS

## Residential New Construction

- The most significant growth in the initiative has been participation in the prescriptive track. MW savings in the prescriptive track increased from zero summer peak MW savings in 2011 to 352 summer peak kW savings in 2014.
- The custom track saw participation for the first time in 2014. One custom project of 55 homes contributed 37 kW demand savings and 0.5 GWh of energy savings.
- New deemed savings for performance track homes were developed and implemented, resulting more consistent realization rates for 2014.
- ENERGY STAR New Homes was introduced as an eligible measure within the performance track in 2014. As a result, these ENERGY STAR New Homes provided 1% of peak kW savings and 4% of kWh savings.

## HOME ASSISTANCE PROGRAM

### Home Assistance Program

- Participation decreased by 5 % to 25,424 participants compared with 2013 (26,756). The decrease was due to six LDCs not participating in the Home Assistance Program in 2014.
- Realization rates for demand doubled in 2014 to 56% compared with 2013 (26%). However, energy realization rates decreased by 10% to 77% compared with 2013 results.
- Realization rate for demand savings increased due to the adoption of the new FAST Tool which incorporated updated kW savings for weatherization measures in particular insulation measures.

## BUSINESS PROGRAM

### Retrofit

- The number of prescriptive projects increased slightly (1.2%) in 2014 to a total of 4,812. However, total net verified savings and peak demand savings dropped significantly (19% and 30% respectively). This is due to a 19% drop in per-project net verified savings, which can be attributed to lower track level realization rate and net-to-gross ratio and is related to smaller average project sizes.
- The quantity of engineered projects increased 22% to a total of 3,906 in 2014, combined with a net verified savings per project increase of 17% the track saw a dramatic 47% increase in net energy savings.
- Lower demand realization rates across the program as a whole were tied to equipment differences between reported and calculated values. For lighting projects the difference was most often seen in baseline and retrofit lamp wattages and ballast factors. Non-lighting tracks exhibited lower demand realization rates due to the following factors:

# 2014 KEY EVALUATION FINDINGS

- Variations in load profiles where the evaluation team found equipment that operated fewer hours or at a lower capacity than expected from the project documentation.
- Inconsistencies in equipment nameplate data (typically efficiency or capacity) between project documentation and equipment installed on-site.
- Weather dependent control systems leading to shifts in how often the equipment operated.

## Small Business Lighting

- 23,784 projects were completed in 2014 (34% increase from 2013)
- The category of 'Other' business type projects increased 71% when compared to 2013. Agribusinesses make up 74% of the 'Other' business type category. While growth in the number of projects is good, agribusinesses projects, in particular, have a realization rate of only 58.5%. This is primarily due to the verified annual operating hours being approximately 45% less than the assumed annual operating hours.
- In 2014 LED measures provide the most net savings of any other SBL measure making up 59% of net energy savings in 2014. Their long effective useful life and retention of a larger amount of savings after the baseline adjustment allow LED measures to also contribute substantially more lifetime savings than CFLs and linear fluorescents.
- Overall energy and demand realization rates decreased by 1.8 and 3.1 %, respectively, from 2013.
  - Sampled rural projects have lower energy realization rather than urban projects (63.8% compared to 83.5%) across the 2011 – 2014 sample
  - Sampled rural projects have even lower demand realization rather than urban projects (49.7% compared to 74.1%) across the 2011 – 2014 sample
  - The annual proportion of net energy savings from rural projects has increased from 30% in 2011 to 41% in 2014

## Audit Funding

- The number of audits carried out in 2014 decreased by 20% when compared to 2013.
- The average per audit net energy savings attributable to the Audit Funding Initiative was estimated to be 65 MWh and 13 kW of summer peak demands savings.
- Time series analysis quantified additional savings from measures implemented after initial program year. It was found that an additional 7.2%, 5.0% and 0.1% can be added to all previously reported projects in 2011, 2012 and 2013 projects, respectively.

## Existing Building Commissioning

- 5 projects completed the Hand-off stage in 2014.

## 2014 KEY EVALUATION FINDINGS

- Energy realization rate was estimated at 116% and demand realization rate at 202%.
- About 31 participants are still in the scoping stage or implementation stage.

### High Performance New Construction

- Savings have increased every year of the initiative with an increased participation of 50% from 2013
- In 2014, most savings came from the custom track providing 71% of demand savings.
- Participation from HVAC measures occurred for the first time in 2014 (providing 14% of summer peak kW savings and 5% of kWh savings).
- The measures with the greatest impact on low realization rates for prescriptive measures were high volume low speed (HVLS) fans and variable frequency drives (VFDs).
- Province-wide realization rates declined slightly for 2014, as a result of the wider variety of measures being implemented.
- Key drivers for participation are: initial project cost, followed by electricity costs and expected energy savings are the key drivers to participation.

# 2014 KEY EVALUATION FINDINGS

## INDUSTRIAL PROGRAM

### Process and Systems – Capital Incentive Initiative

- 10 PSUI Capital Incentive projects implemented in 2014, compared to 5 in 2013.
  - 4 projects are Behind the Meter Generation (BMG) projects.
  - The remaining projects were energy efficiency improvements in pumping, cooling, compressed air systems and industrial processes.
- Each project received its own Net to Gross (NTG) value. NTG ratios ranged from 62% to 100% for the 10 projects
- Realization rates remained high in 2014, ranging from 90 to over 100%.

### Process and Systems Energy Managers Initiative – Non incented savings

- 379 Energy Manager projects were completed in 2014 compared to 306 in 2013
- Energy Managers are important drivers of non incented savings projects.
- In 2014, the Energy Mangers initiative has contributed to 35% of energy savings for Industrial Programs
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### Process and Systems Monitoring and Targeting Initiative – Non incented savings

- 5 projects were completed in 2014, compared to 3 in 2013.
- Low realization rates (36% for energy savings and 59% for demand savings) are attributed to reported savings based on total potential savings rather than non-incentivized realized savings, while the verified savings only include non-incentivized savings).

# 2014 KEY EVALUATION FINDINGS

## Demand Response - DR-3

- The largest 25 contributors account for 60% of the contractual demand reduction – that is, less than 4% of contributors account for the majority of the load reductions.
- A multi-year analysis indicates 2012 was the best year for program performance. After 2012, a single large contributor left the program, resulting in a decrease in overall performance in 2013 and 2014. This highlights the risk having a highly concentrated program with a few large contributors representing a large share of the program capacity.
- There were no events called in 2014 and the contracted capacity was similar to 2013.

### Note:

The Key Evaluation findings are derived from the 2014 evaluations of the saveONenergy programs. These findings were developed by 3<sup>rd</sup> party evaluation contractors. Complete findings are detailed in the contractors' full evaluation reports, which will be available publicly in Q4 2015.