
Welland Hydro-Electric System Corp.

ED-2003-002

Conservation and Demand Management

2013 Annual Report

Submitted to:

Ontario Energy Board

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

BACKGROUND 5

1 BOARD-APPROVED CDM PROGRAM..... 7

 1.1 Introduction7

 1.2 TOU Pricing.....7

 1.2.1 Background7

 1.2.2 TOU PROGRAM DESCRIPTION.....7

 1.3 Welland Hydro-Electric System Corp.’s Application with the OEB8

 1.4 Welland Hydro-Electric System Corp.’s Application with the OPA’s Conservation Fund.....8

2 OPA-CONTRACTED PROVINCE-WIDE CDM PROGRAMS 10

 2.1 Introduction10

 2.2 Program Descriptions.....12

 2.2.1 Residential Program.....12

 2.2.2 Commercial and Institutional Program.....18

 2.2.3 Industrial Program23

 2.2.4 Low Income Initiative (Home Assistance Program) (Schedule E-1)27

 2.2.5 Pre-2011 Programs28

3 2013 LDC CDM RESULTS 29

 3.1 Participation and Savings29

 3.2 Evaluation.....33

 3.3 Spending.....34

 3.4 Additional Comments37

4 COMBINED CDM REPORTING ELEMENTS..... 37

 4.1 Progress Towards CDM Targets37

 4.2 Variance from Strategy38

 4.3 Outlook to 2014 and Strategy Modifications.....38

5 CONCLUSION 40
APPENDIX A: INITIATIVE DESCRIPTIONS..... 41
APPENDIX B: PRE-2011 PROGRAMS 52

Executive Summary

This annual report is submitted by Welland Hydro-Electric System Corp. (ED-2003-002) in accordance with the filing requirements set out in the CDM Code (Board File No. EB-2010-0215), specifically Appendix C Annual Report Template, as a progress report and modification to Welland Hydro-Electric System Corp. Strategy. Accordingly, this report outlines Welland Hydro-Electric System Corp. CDM activities for the period of January 1, 2013 to December 31, 2013. It includes net peak demand and net energy savings achieved from 2011, 2012 and 2013, with discussion of the current/future CDM framework, CDM program activities, successes and challenges, as well as forecasted savings to the end of 2014.

Welland Hydro-Electric System Corp. did not apply for any Board-Approved CDM Programs during 2013; however, as noted in the CDM guidelines, released April 26, 2012, the Ontario Energy Board (OEB) has deemed Time-of-Use (TOU) pricing a Province-wide Board-Approved CDM Program. The Ontario Power Authority (OPA) is to provide measurement and verification on TOU. At the time of this report the OPA has not released any verified results of TOU savings to Welland Hydro-Electric System Corp..

In 2011, Welland Hydro-Electric System Corp. contracted with the Ontario Power Authority (OPA) to deliver a portfolio of OPA-Contracted Province-Wide CDM Programs to all customer segments including residential, commercial, institutional, industrial and low income. These programs were rolled-out by the OPA in June 2011. In 2011 Program activities were centered on building a foundation for full program execution over the next three years of the program term, including staffing, procurement, and program delivery.

In 2012, Welland Hydro-Electric System Corp.'s primary goal was to secure projects that would result in significant peak demand reductions. Our strategy, which included partnering with one of the approved Provincial aggregators and aggressively marketing the Demand Response 3 initiative, was successful resulting in 5.718 MW of peak demand reduction from this initiative in 2012 alone. In addition, Welland Hydro-Electric System Corp. continued to focus on assisting its commercial, institutional and industrial customers in finding energy efficiencies around their facilities. As a result, an increased number of projects were received in 2012, as well as, several audits, engineering studies and supporting resources (i.e. Embedded Energy Managers) were implemented. These efforts will undoubtedly be reflected in our 2013 and 2014 results with several significant projects being identified and scheduled for completion before December 31, 2014.

In 2013, Welland Hydro-Electric System Corp. continued to focus on its commercial, institutional and industrial customers with a goal of providing enhanced customer service. Such actions would include, but are not limited to, assisting customers in identifying opportunities for efficiency gains, providing support preparing information that would be used to support business cases for capital funding approvals, taking care of the administrative process in order to allow customers to participate in the saveONenergy initiatives, providing access to the appropriate technical experts for the proposed projects at little to no cost, as well as assisting with monitoring and verification both pre and post project where necessary. These enhanced services offered as part of Welland Hydro-Electric System Corp.'s CDM efforts in 2013 have resulted in 6.3 MW (scenario 2) of net incremental peak demand savings and 4.5 GWh of net incremental energy savings. A summary of the achievements towards the CDM targets is shown below:

OPA-Contracted Province-Wide CDM Programs Final Verified 2013 Results

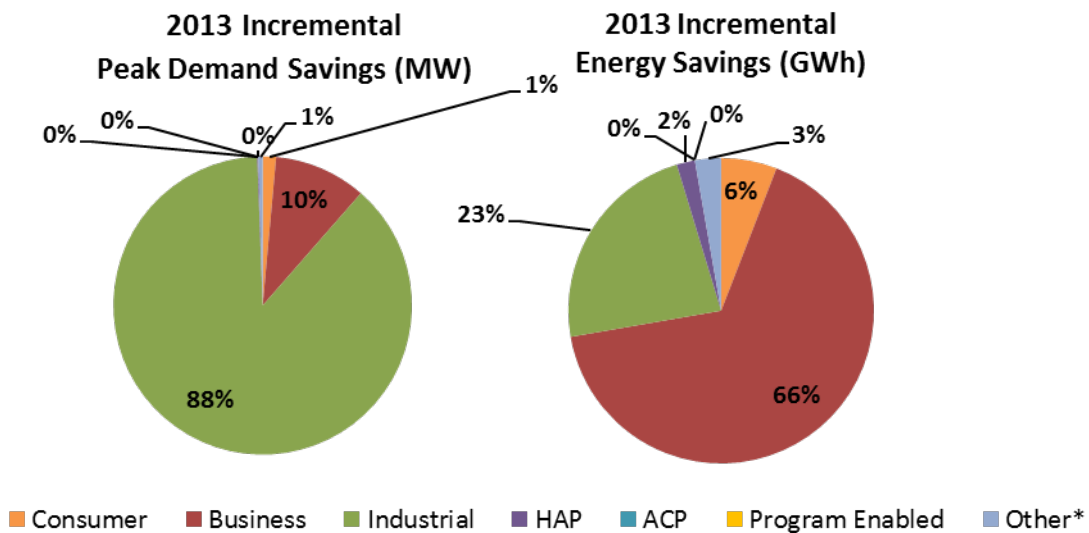
LDC: Welland Hydro-Electric System Corp.

FINAL 2013 Progress to Targets	2013 Incremental	Program-to-Date Progress to Target (Scenario 1)	Scenario 1: % of Target Achieved	Scenario 2: % of Target Achieved
Net Annual Peak Demand Savings (MW)	6.3	1.5	26.6%	126.7%
Net Energy Savings (GWh)	4.5	21.0	102.1%	102.1%

Scenario 1 = Assumes that demand response resources have a persistence of 1 year

Scenario 2 = Assumes that demand response resources remain in the LDC service territory until 2014

Achievement by Sector



**Other includes adjustments to previous years' results and savings from pre-2011 initiatives*

The updated forecast prepared for this report shows that under scenario 2, **Welland Hydro-Electric System Corp. has exceeded its 2014 Peak Demand target by over 26%. In addition, Welland Hydro-Electric System Corp. has also achieved its 2014 Energy Savings target, making it the first LDC in the Province to achieve both targets.**

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 Ontario Energy Board (OEB) to establish Conservation and Demand Management (CDM) targets to be met by electricity distributors. Accordingly, on November 12, 2010, the OEB amended the distribution license of Welland Hydro-Electric System Corp. to require Welland Hydro-Electric System Corp., as a condition of its license, to achieve **20.6 GWh** of energy savings and **5.56 MW** of summer peak demand savings, over the period beginning January 1, 2011 through December 31, 2014.

In accordance with the same Minister's directive, the OEB issued the Conservation and Demand Management Code for Electricity Distributors (the Code) on September 16, 2010. The code sets out the obligations and requirements with which electricity distributors must comply in relation to the CDM targets set out in their licenses. To comply with the Code requirements, Welland Hydro-Electric System Corp. submitted its original CDM Strategy on November 1, 2010 and its amended CDM Strategy on May 2, 2011, which provided a high level of description of how Welland Hydro-Electric System Corp. intended to achieve its CDM targets.

The Code also requires a distributor to file annual reports with the Board. This is the third Annual Report by Welland Hydro-Electric System Corp. and has been prepared in accordance with the Code requirement and covers the period from January 1, 2013 to December 31, 2013.

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

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

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

Welland Hydro-Electric System Corp. submitted its 2012 Annual Report on September 30, 2013 which summarized the CDM activities undertaken by Welland Hydro-Electric System Corp. for the January 1, 2012 to December 31, 2012 period. The OEB's 2012 CDM Results report identified that the majority of LDCs achieved close to 20% of their net peak demand (MW) target from their 2012 results. However, LDCs generally advised the Board that meeting their peak demand (MW) target is not likely and that a shortfall is expected.

LDCs collectively achieved approximately 8% of the energy savings (GWh) target, which is slightly below the 10% incremental annual savings needed each year to achieve the energy savings target. Overall the cumulative results represent approximately 65% of the net energy target of 6,000 GWh.

The report identified that although there have been improvements to programs there still remains some shortcoming to the design and delivery of certain initiatives that have resulted in a negative impact to some

programs. In particular, the change management process still requires improvements to expedite enhancements to initiatives. The report also noted that certain initiatives may be reaching the point of market saturation and that new initiatives may need to be developed in order to take the place of the existing initiatives.

1 Board-Approved CDM Program

1.1 Introduction

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

At this time, the implementation of Time-of-Use (“TOU”) Pricing has been deemed as a Board-Approved Conservation and Demand Management (“CDM”) program that is being offered in Welland Hydro-Electric System Corp.’s service territory.

1.2 TOU Pricing

1.2.1 Background

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

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

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

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

As of September 30, 2014, the OPA has not released any verified results of TOU savings to Welland Hydro-Electric System Corp.. Therefore, Welland Hydro-Electric System Corp. is not able to provide any verified savings related to LDC’s TOU program at this time.

1.2.2 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

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

Initiative Activities/Progress:

Welland Hydro-Electric System Corp. began transitioning its RPP customers to TOU billing on February 1, 2012. At December 31st, 2013, 22,054 RPP customers had a TOU rate code (including those on retail contracts). Excluding those accounts who are enrolled with an electricity retailer, Welland Hydro-Electric System Corp. had 20,619 accounts on TOU billing.

1.3 Welland Hydro-Electric System Corp.’s Application with the OEB

Welland Hydro-Electric System Corp. did not submit a CDM program application to the OEB in 2013.

1.4 Welland Hydro-Electric System Corp.’s Application with the OPA’s Conservation Fund

In 2013, the OPA introduced the Conservation Fund to help meet LDC’s interest in 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 OPA portfolio and the means to test concepts for future local or province wide programs post 2014. As per the OPA, as of March 2014, three pilots have been contracted and are underway with Toronto Hydro and Niagara Peninsula Energy and ten others are in various stages of the contracting and development process.

In addition, building on LDC interest in social benchmarking services for the residential sector, in 2013 the Conservation Fund in collaboration with Hydro One, Milton Hydro and Horizon Utilities completed the procurement of three social benchmarking pilot projects. Beginning in 2014 these services will be offered to more than 100,000 customers for a one year period, with evaluation reports published shortly thereafter.

Welland Hydro-Electric System Corp. did not officially submit a CDM program application to the OPA's Conservation Fund in 2013. However, Welland Hydro-Electric System Corp. did discuss its concept for a future residential program which is customer centric and includes all forms of energy (electricity, gas and water). This whole-home approach will offer customers a "one-stop shop" for all incentives related to home retrofits resulting in energy savings. As a result of these discussions, the OPA indicated that this type of program would be eligible for pilot funding from the Conservation Fund upon receipt of a cost-effective business case from Welland Hydro-Electric System Corp.. In turn, Welland Hydro-Electric System Corp. has further developed and refined the program concept and is currently contracted with ICF International to determine estimated uptake in Welland Hydro-Electric System Corp.'s service territory and calculate TRC, PAC and LUEC values to be included in the business case submitted to the OPA in Q1 2015.

2 OPA-Contracted Province-Wide CDM Programs

2.1 Introduction

Effective March 1, 2011, Welland Hydro-Electric System Corp. entered into an agreement with the OPA to deliver CDM programs extending from January 1, 2011 to December 31, 2014, which are listed below. Program details are included in Appendix A. In addition, results include projects started pre 2011 which were completed in 2011:

Initiative	Schedule	Date schedule posted	Welland Hydro-Electric System Corp. in Market Date
Residential Programs			
Appliance Retirement	Schedule B-1, Exhibit D	Jan 26, 2011	Mar 1, 2011
Appliance Exchange	Schedule B-1, Exhibit E	Jan 26, 2011	Mar 1, 2011
HVAC Incentives	Schedule B-1, Exhibit B	Jan 26, 2011	Mar 1, 2011
Conservation Instant Coupon Booklet	Schedule B-1, Exhibit A	Jan 26, 2011	Mar 1, 2011
Bi-Annual Retailer Event	Schedule B-1, Exhibit C	Jan 26, 2011	Mar 1, 2011
Retailer Co-op	n/a	n/a	n/a
Residential Demand Response	Schedule B-3	Aug 22, 2011	Not offered in our service territory
New Construction Program	Schedule B-2	Jan 26, 2011	Mar 1, 2011
Home Assistance Program	Schedule E-1	May 9, 2011	July 28 2011
Commercial & Institutional Programs			
Efficiency: Equipment Replacement	Schedule C-2	Jan 26, 2011	March 18, 2011
Direct Install Lighting <ul style="list-style-type: none"> General Service <50 kW 	Schedule C-3	Jan 26, 2011	March 2, 2011
Existing Building Commissioning Incentive	Schedule C-6	Feb 2011	Mar 1, 2011
New Construction and Major Renovation Initiative	Schedule C-4	Feb 2011	Jan 17, 2012
Energy Audit	Schedule C-1	Jan 26, 2011	Mar 1, 2011
Commercial Demand Response <ul style="list-style-type: none"> General Service <50 kW 	Schedule B-3	Jan 26, 2011	Not offered in our service territory
Industrial Programs - General Service 50 kW & above			
Process & System Upgrades	Schedule D-1	May 31, 2011	May 31, 2011
Monitoring & Targeting	Schedule D-2	May 31, 2011	May 31, 2011
Energy Manager	Schedule D-3	May 31, 2011	May 31, 2011
Key Account Manager ("KAM")	Schedule D-4	May 31, 2011	August 2011
Efficiency Equipment Replacement Incentive <ul style="list-style-type: none"> (part of the C&I program schedule) 	Schedule C-2	May 31, 2011	May 31, 2011
Demand Response 3	Schedule D-6	May 31, 2011	June 3, 2011

In addition, results were realized towards Welland Hydro-Electric System Corp.'s 2011-2014 target through the following pre-2011 programs:

- Electricity Retrofit Incentive Program
- High Performance New Construction

As per the table below, several program initiatives are no longer available to customer or have not been launched in 2013.

Not in Market	Objective	Status
Residential Program		
Midstream Electronics	Encourages retailers to promote and sell high efficiency televisions, and for distributors to distribute high efficiency set top boxes.	Did not launch and removed from Schedule in Q2, 2013.
Midstream Pool Equipment	Encourage pool installers to sell and install efficient pool pump equipment in residential in-ground pools.	Did not launch and removed from Schedule in Q2, 2013.
Home Energy Audit Tool	This is a provincial online audit tool to engage customers in conservation and help drive customer participation to CDM programs.	Did not launch and removed from Schedule in Q2, 2013.
Commercial & Institutional Program		
Direct Service Space Cooling	Offers free servicing of air conditioning systems and refrigeration units for the purpose of achieving energy savings and demand reduction.	Did not launch in 2011/2012. As per the OPA there no plans to launch this Initiative in 2013.
Demand Response 1 ("DR1")	This initiative allows distribution customers to voluntarily reduce electricity demand during certain periods of the year pursuant to the DR 1 contract. The initiative provides DR payment for service for the actual electricity reduction provided during a demand response event.	No customer uptake for this initiative. As a result this Initiative was removed from the Schedule in Q4, 2012.
Industrial Program		
DR1	As above	No customer uptake for this initiative. Removed in Q4, 2012.

The Master CDM Program Agreement includes program change management provision in Article 3. Collaboration between the OPA and the Local Distribution Companies (LDCs) commenced in 2011, and continued in 2012, as the change management process was implemented to enhance the saveONenergy program suite. 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.

2.2 Program Descriptions

Full OPA-Contracted Province-Wide CDM Program descriptions are available on the OPA's website at <http://www.powerauthority.on.ca/lcd-province-wide-program-documents> and additional initiative information can be found on the saveONenergy website at <https://saveonenergy.ca>. The targeted customer types, objectives, and individual descriptions for each Program Initiative are detailed in Appendix A.

2.2.1 RESIDENTIAL PROGRAM

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 developers/builders to motivate the installation of energy efficiency measures in both existing and new home construction.

Discussion:

The Residential Program Portfolio is predominately a carryover of Initiatives from previous programs. It is mostly driven by retailers and contractors and unfortunately they have not fully delivered what was anticipated. Three new initiatives (Midstream Electronics, Midstream Pool Equipment and Home Energy Audit Tool) were not launched and subsequently removed from the schedule in 2013 with no new additions. Delays in communication with regards to Initiative offerings and results reporting have hampered LDCs abilities to engage customers and promote participation.

The addition of LED measures to the Bi-Annual Retailer Event and in the Annual Coupon initiative in July 2013 has had a positive impact on customer participation. There was the added benefit of three LDC custom coded coupon options for LDCs to utilize in 2013. The Residential Demand Response program continues to be the largest contributor to demand savings in the Residential Program and has been generally well received by consumers. Unfortunately, there were no savings associated with the Energy Display attributed to LDCs in the OPA's 2012 verified results.

Province-wide advertising was re-introduced in Q3 2013. This provided limited value due to the late market entry, especially for *peaksaver*PLUS.

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

Based on information received from members of the Residential Working Group, there are no new residential programs on the horizon. Therefore, due to the length of time the current initiatives have been in market, and the ineffectiveness of contractor and/or retailer driven programs, Welland Hydro-Electric System Corp. has developed a future residential program concept which is customer centric and includes all forms of energy (electricity, gas and water). This whole-home approach will offer customers a "one-stop shop" for all incentives related to home retrofits resulting in energy savings. Currently, Welland Hydro-Electric System Corp. has contracted with ICF International to determine estimated uptake for this type of program in Welland Hydro-Electric System Corp.'s

service territory and calculate TRC, PAC and LUEC values to determine the cost effectiveness of the program. Welland Hydro-Electric System Corp. has been in discussions with Enbridge gas and they have expressed an interest in being part of a pilot in 2015 should the program be deemed cost effective. Welland Hydro-Electric System Corp.'s goal is to be in market with the pilot by the end of Q2 2015. If the program is successful, Welland Hydro-Electric System Corp. will collaborate with other LDCs to expand the service area of this offering in 2016.

2.2.1.1 *Appliance Retirement Initiative (Exhibit D)*

Initiative Activities/Progress:

- Promotional inserts as part of monthly unaddressed coupon/informational mailers (distribution to approximately 25,000 residents per month).
- 47 ads throughout the year in local newspapers (circulation approximately 25,000 per ad).
- Promotion on corporate website throughout 2013.

Additional Comments:

- Due to the duration of the program, and the revised eligibility requirements to a minimum of 20 years old, this Initiative appears to have reached market saturation and has been under consideration for removal from the Portfolio.
- Rather than strictly remove this Initiative from the schedules, the OPA and LDCs could review what opportunities there are to include other measures such as stoves, dishwashers, washers and dryers. The framework of this Initiative may be a suitable foundation for a more holistic residential appliance retirement program. As such, the Residential portfolio could be straightened through program evolution rather than weakened through diminished program offerings.
- As participation is very responsive to province wide advertising, OPA province-wide advertising should continue to play a key role if the initiative continues.
- Better relationships with retailers may play a role in increasing participation in this Initiative. Retailers can provide opportunities to capture replacement appliances and have them decommissioned after a sale has been committed.
- 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.

2.2.1.2 *Appliance Exchange Initiative (Exhibit E)*

Initiative Activities/Progress:

- Promotion on corporate website throughout 2013.

Additional Comments:

- The design of the Initiatives, including eligible measures and incentives amounts are developed through the Residential Working Group. Retail Partner(s) are contracted by the OPA to deliver the initiatives province-wide. Individual LDCs have the opportunity to stage in-store events to drive the distribution of LDC coded Coupons and promotion of other programs in the portfolio
- The restrictive, limited and sometimes non-participation of local stores can diminish the savings potential for this Initiative.
- To date there has only been one retailer participant in the Appliance Exchange Initiative.
- In 2012 there was a decrease in the number of window air conditioners being received through the program. A review of eligible measures in the Appliance Exchange program was conducted, and as these units are not cost effective on their own it was determined that they be removed from the program in order to improve the overall cost effectiveness of the Initiative
- Notification to LDCs regarding retailer participation and eligible measures continues to be delayed. Improved communications will aid in appropriate resource allocation and marketing of the Initiative.
- This Initiative may benefit from the disengagement of the retailer and allowing LDCs to conduct these events, possibly as part of a larger community engagement effort, with the backing of ARCA for appliance removal.
- The initiative appears to require more promotion from retailers and LDCs.

2.2.1.3 HVAC Incentives Initiative (Exhibit B)

Initiative Activities/Progress:

- Promotional inserts as part of monthly unaddressed coupon/informational mailers (distribution to approximately 25,000 residents per month).
- 65 ads throughout the year in local newspapers (circulation approximately 25,000 per ad).
- Promotion on corporate website throughout 2013.

Additional Comments:

- Incentive levels appear to be insufficient to prompt customers to upgrade HVAC equipment prior to end of useful life. An Air Miles incentive was introduced in 2013 to try and encourage early replacement.
- This Initiative is contractor driven with LDCs responsible for marketing efforts to customers. More engagement with the HVAC contractor channel should be undertaken to drive a higher proportion of furnace and CAC sales to eligible units.

- In an effort to build capability, mandatory training has been instituted for all participating HVAC contractors. This could present too much of a barrier for participation for some contractors as the application process already presents a restriction to contractor sales. It has been noted that there are approximately 4500-5000 HVAC contractors in the Province, however in 2013, only a total of 1,587 contractors completed the mandatory HVAC training and can participate in the program.
- Many participating contractors are also failing to promote eligible units, instead discouraging customers by indicating the extra cost for these units cannot be recouped via energy savings.
- There are many cases where non-participating contractors are offering their own incentives (by discounting their installations to match value of the OPA incentive). As this occurs outside of the Initiative, savings are not credited to LDCs. OPA should consider this in future program impact evaluation studies.
- Changes to the Schedule in 2014 to allow for incentives for new installations, rather than strictly replacement units, may provide greater Initiative results.

2.2.1.4 Conservation Instant Coupon Initiative (Exhibit A)

Initiative Activities/Progress:

- Promotion on corporate website throughout 2013.

Additional Comments:

- The timeframe for retailer submission of redeemed coupons varies depending on the retailer and in some cases has been lengthy. The delays and incomplete results reporting limits the ability to react and respond to Initiative performance or changes in consumer behaviour.
- Coupon booklets were not printed and mailed out in 2013 so were not widely available to consumers without the ability to download and print online coupons. In addition, consumers may not have been aware of the online coupons. The Initiative may benefit from province-wide marketing as a substitute to a mail out campaign.
- The product list could be distinctive from the Bi-Annual Retailer Event Initiative in order to gain more consumer interest and uptake.
- Program evolution, including new products and review of incentive pricing for the coupon Initiatives, should be a regular activity to ensure continued consumer interest.
- In 2013, LDCs were provided with 3 custom coded coupons. All coupons have been provided with LDC custom coding in 2014 which allows LDCs to promote coupons based on local preferences.
- Consumer experience varies amongst retailers offering Coupon discounts which can limit redemptions. For example, a particular high volume 'participating retailer' does not accept coupons and have their own procedure. In addition, some retailers have static lists of eligible products and will not discount eligible products unless the product on the list.

- The saveONenergy programs would benefit from specific end cap displays, aisle product stands and product-specific areas. Having products throughout a retail environment weakens the impact.

2.2.1.5 *Bi-Annual Retailer Event Initiative (Exhibit C)*

Initiative Activities/Progress:

- Promotion on corporate website throughout 2013.
- Promotional displays within our Customer Service area during Retailer Events.

Additional Comments:

- This Initiative is strongly influenced by the retail participants and has no direct involvement from the LDCs.
- LDCs have the opportunity to stage in-store events to drive the distribution of LDC coded Coupons and promotion of other programs in the portfolio however this requires cooperation from the local retailer and LDC staff bandwidth.
- Limited engagement of local retailers can restrict the savings potential for this Initiative.
- The Product list has changed very little over the past five years.
- Program evolution, including new products and review of incentive pricing for the coupon Initiatives, must be a regular activity to ensure continued consumer interest.
- The Product list could be distinctive from the Conservation Instant Coupon Initiative in order to gain more consumer interest and uptake.
- A review conducted by the Residential Working Group identified three areas of need for Initiative evolution: 1) introduction of product focused marketing; 2) enhanced product selection and 3) improved training for retailers as retail staff tend not to be knowledgeable regarding the products or promotion.
- This Initiative may benefit from a more exclusive relationship with a retailer appropriate to the program. There should be a value proposition for both the retailer and LDC.
- Independently the Retailer Co-op and Bi-Annual Retailer Event Initiative may not present a value for the investment of LDC resources to support these events and should be backed by a strong Residential portfolio.

2.2.1.6 *Retailer Co-op*

Initiative Activities/Progress:

- Did not promote this initiative in 2013.

Additional Comments:

- This is a retailer Initiative with no direct benefit to the LDCs
- Limited engagement of local retailers can restrict the savings potential for this Initiative.
- The availability of retailer and/or LDC staff with product knowledge and the ability to conduct demonstration in store during the events would be an asset. This could be a valuable role for LDCs, however many LDCs are limited by available resources and unable to participate.

2.2.1.7 New Construction Program (Schedule B-2)**Initiative Activities/Progress:**

- Promotion on corporate website throughout 2013.

Additional Comments:

- This Initiative provides incentives to home builders for incorporating energy efficiency into their buildings. 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.
- In 2012 the application process was streamlined, however continues to be too cumbersome for builders. This combined with limited return has resulted in this Initiative to continue to under-achieve.
- Administrative requirements, in particular individual home modeling, must align with perceived stakeholder payback
- Performance applications are expected to increase in 2014 due to some industry players' interest in the Initiative. However, it is anticipated that the performance track will be the primary track used in applications, which provides low savings for the incentive provided. Savings and associated incentives may need to be revised to an appropriate level.
- The addition of LED light fixtures, application process improvement and moving the incentive from the builder to the home-owner may increase participation.
- This Initiative may benefit from collaboration with the Natural Gas utilities.

2.2.1.8 Residential Demand Response Program (Schedule B-3)**Initiative Activities/Progress:**

- Not offered in our service territory in 2013.

Additional Comments:

- In Home Energy Display units that communicate with installed smart meter technology continue to mostly be in the development phase and are not ready for market deployment. There continues to be a lack of Energy Display selection in the marketplace.
- Smart Meters installed by most LDCs do not have the capability to communicate directly to an In Home Display and any mass replacement of newly installed meters with communicating abilities would not be fiscally responsible. When proposing technical Initiatives that rely on existing LDC hardware or technology there should be an extensive consultative process.
- Introduction of new technology requires incentives for the development of such technology. Appropriate lead times for LDC analysis and assessment, product procurement, and testing and integration into the Smart Meter environment are also required. Making seemingly minor changes to provincial technical specifications can create significant issues when all LDCs attempt to implement the solution in their individual environments.
- The variable funding associated with installing a load controllable thermostat is not sufficient unless it is combined with an In Home Display (IHD) which might not be possible all the time and when IHD is optional.
- Given the different LDC environments, and needs, each LDC is positioning the Initiative slightly differently. While a Thermostat has high marketability, it also carries a higher maintenance liability due to no-heat and no-AC calls. A switch with an independent IHD is seen as a lower liability option but also has a much lower marketability.
- This is the main Initiative within the Residential portfolio that was to drive savings for LDC, however the 2012 evaluation indicated savings realized from the IHD were not statistically significant. LDCs were advised that the evaluation of the IHDs would continue with 2013 data.
- Verified demand savings in 2012 from the load control devices were less than originally anticipated. This prompted an increase to the load cycling strategy in 2013 in order to increase savings closer to the original business case.

2.2.2 COMMERCIAL AND INSTITUTIONAL PROGRAM

Description: Provides commercial, institutional, agricultural and industrial organizations with energy-efficiency programs to help reduce their electrical costs while helping Ontario defer the need to build new generation and reduce its environmental footprint. Programs to help fund energy audits, to replace energy-wasting equipment or to pursue new construction that exceed our existing codes and standards. Businesses can also pursue incentives for controlling and reducing their electricity demand at specific times.

Targeted Customer Type(s): Commercial, Institutional, Agricultural, Multi-family buildings, Industrial

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:

Throughout 2011 to 2013 the Commercial and Institutional (C&I) Working Group has strived to enhance the existing C&I programs and rectify identified program and system deficiencies. This has proven to be a challenging undertaking. Overbuilt governance, numerous initiative requirements, complex program structure and lengthy change management have restricted growth without providing the anticipated improved Measurement and Verification results. In addition, Evaluation, Measurement and Verification (EM&V) has not yet achieved transparency. LDCs are held accountable for these results yet are mostly completely removed from the process.

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

Despite these challenges the C&I Working Group, working in cooperation with the OPA, have managed to iron out many of the issues which could be rectified. In particular, an accomplishment of 2012 was the advent of the expedited change management as means to accelerate certain program changes. 2013 saw the benefits of expedited change management process.

Looking ahead there is minimal opportunity to make valuable changes to the current program suite and have these changes reflected in LDC 2014 results. LDCs and the OPA should look beyond the current Initiatives and work to launch new programs, built on the strengths of the 2011-2014 programs, which will meet the needs of the industry and consumers.

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

Initiative Activities/Progress:

- Hosted technology specific events/workshops with other Niagara area LDCs and the OPA to promote the initiative and create awareness amongst channel partners as well as commercial and industrial customers.
- Continual communication with our customers either via phone, email or face-to-face.
- Promotion on corporate website throughout 2013.

Additional Comments:

- A large proportion of LDC savings are attributed to ERII.
- Capability building programs from Industrial programs have had very positive contributions to ERII program.
- This Initiative is limited by the state of the economy and the ability of commercial/institutional facility to complete capital upgrades.
- 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. As such, Applicant Representatives continue to influence the majority of applications submitted. Continued development of Channel Partners is essential to program success.

- 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.
- A focus on demand incentives has limited some kWh project opportunities. In particular, night lighting projects have significant savings potential for customers but tend to have incentives of 10% of project cost or less.
- The requirement to have a customer invoice the LDC for their incentive is very burdensome for the customer and results in a negative customer experience and another barrier to participation.
- There is redundancy in the application process as customers may need to complete a worksheet and then enter most of that information over to the online application form. This can be cumbersome.
- Processing Head Office application became much easier for the Lead LDC after Schedule changes came into effect in August 2013. The changes implemented allowed the Lead LDC to review and approve all facilities in a Head Office application on behalf of all satellite LDCs under certain circumstances.
- The application process for Head Office projects remains a significant barrier. Applicants need to manually enter one application per facility associated with the project can be extremely onerous, often requiring a dedicated resource.
- Streamlining of the settlements systems resulted in significant improvement in the payment process in 2013.

2.2.2.2 *Direct Install Initiative (DIL) (Schedule C-3)*

Initiative Activities/Progress:

- Promotional inserts as part of monthly unaddressed coupon/informational mailers (distribution to approximately 25,000 residents per month).
- 29 ads throughout the year in local newspapers (circulation approximately 25,000 per ad).
- Promotion on corporate website throughout 2013.

Additional Comments:

- 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.
- Cold start high output lighting was removed from the program. This particularly affected the farming customers who now have limited options within the program to utilize.
- The inclusion of a standard incentive for additional measures increased project size and drove higher energy and demand savings results in some situations. However, LDCs are unable to offer these standard incentives to prior participants. The ability to return to prior participants and offer a standard incentive on the remaining upgrades has potential to provide additional energy and demand savings

- Many customers are not taking advantage of any additional measures, which may present an opportunity to for future savings with a new program offering.
- Electrical contractor's margins have been reduced due to no labour rate increase, increase cost of materials, greater distances between retrofit and more door knocking required before a successful sale. This has led to a reduction in vendor channel participation in some regions.
- Measure incentives and additional funding for fork lifts were introduced in September 2013 and were well received by installers. However, adjustments like these require longer lead times. As such, many customers were not able to benefit from this change in late 2013. Consideration should be given to providing advanced notification to LDCs and contractors of the upcoming changes to allow for planning.

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

Initiative Activities/Progress:

- During conversations with facilities that would be eligible for this initiative, the program was promoted.
- Promotion on corporate website throughout 2013.

Additional Comments:

- Initiative name does not properly describe the Initiative.
- 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.
- Participation is mainly channel partner driven, however the particulars of the Initiative have presented a significant for many channel partners to participate.
- The customer expectation is that the program be expanded to include a broader range of measures for a more holistic approach to building re-commissioning and chilled water systems used for other purposes should be made eligible and considered through Change Management.
- This initiative should be reviewed for incentive alignment with ERII, as currently a participant will not receive an incentive if the overall payback is less than 2 years.

2.2.2.4 New Construction and Major Renovation Initiative (HPNC) (Schedule C-4)

Initiative Activities/Progress:

- Continued our partnership with our municipality's planning department to receive information when prospective projects begin inquiring about building permit information.

- Internal staff followed up on leads directly with potential participants.
- Promotion on corporate website throughout 2013.

Additional Comments

- With the Ministerial Directive issued December 21, 2012, facilities with a completion date near the end of 2014 currently have some security that they will be compensated for choosing efficient measures. However, buildings that are in the planning phase with completion dates post-2015 may not participate due to funding uncertainty.
- Participants estimated completion dates tend to be inaccurate and are usually six months longer. This could result in diminished savings towards target when facilities are not substantially completed by December 31, 2014.
- The custom application process requires considerable customer support and skilled LDC staff. The effort required to participate through the custom stream exceeds the value of the incentive for many customers.
- There are no custom measure options for items that do not qualify under the prescriptive or engineered track as the custom path does not allow for individual measures, only whole building modelling.
- This Initiative has a very low net-to-gross ratio, which results in half the proposed target savings being 'lost'.
- The requirement to have a customer invoice the LDC for their incentive is very burdensome for the customer and results in a negative customer experience and a potential barrier to participation.

2.2.2.5 Energy Audit Initiative

Initiative Activities/Progress:

- Regularly promoted during discussions with non-residential accounts and/or when conducting facility walkthroughs and potential opportunities are identified.
- Promotion on corporate website throughout 2013.

Additional Comments:

- The introduction of the new audit component for one system (i.e. compressed air), has increased customer participation.
- The energy audit Initiative is considered an 'enabling' Initiative and 'feeds into' other saveONenergy Initiatives.
- Evaluators in 2012 and 2013 recognized savings towards LDCs targets as a result of customers implementing low/no cost recommendations from their energy audits.

- Audit reports from consultants vary considerably and in some cases, while they adhere to the Initiative requirements, do not provide value for the Participant. A standard template with specific energy saving calculation requirements should be considered.
- Customers look to the LDCs to recommend audit companies. A centralized prequalified list provided by the OPA may be beneficial.
- Participation has been limited to one energy audit per customer which has restricted enabling and direction to the other Initiatives. This has been revised in 2014 and LDCs are now able to consider additional customer participation when presented with a new scope of work.
- Consideration should be given to allowing a building owner to undertake an audit limited to their lighting system. This way they may receive valuable information from neutral third party regarding the appropriate lighting solution for their facility instead of what a local supplier wants to sell.
- The requirement to have a customer invoice the LDC for their incentive is very burdensome for the customer and results in a negative customer experience and another barrier to participation

2.2.3 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. This allows facilities to take control of their energy so they can create long-term competitive energy advantages which reach across the organization.

Targeted Customer Type(s): Industrial, Commercial, Institutional, Agricultural

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 significant incentives and valuable resources to large facilities to help them with energy efficiency upgrades and process system improvements. The Engineering Studies in particular as well as the Monitoring and Targeting initiative provide a unique opportunity for a customer to complete a comprehensive analysis of an energy intensive process that they otherwise may not 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.

Due to the size, scope and long lead time of these Initiatives and associated projects, the Ministerial Directive provides some security for the continuation of the conservation programs and associated compensation for the participant; however the subsequent savings would not be attributed to an LDC's current target for projects that go into service after 2014.

Extensive legal documents, complex program structure and lengthy change management have restricted the change and growth of this Portfolio. While the expedited change management has benefited the Commercial

Portfolio, the Industrial Portfolio has not seen the same results due to the narrow scope of the process. For 2013 the change to the threshold for small capital projects and the new small capital project agreement are expected to improve the number of projects and savings achieved within PSUI. Likewise, a decision to proceed with 2012 natural gas load displacement generation projects applications will also increase uptake although the limited time to bring new projects into service is a barrier.

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

Initiative Activities/Progress:

- Reviewed during discussions with non-residential accounts where the proposed savings resulting from a potential project meet the minimum requirements of the initiative.
- Promotion on corporate website throughout 2013.

Additional Comments:

- Numerous energy studies have been submitted and completed. This is a strong indication that there is the potential for large projects with corresponding energy savings. Most of these studies have been initiated through the Energy Manager and KAM resources.
- This Initiative is limited by the state of the economy and the ability of a facility to complete large capital upgrades.
- There is typically a long sales cycle for these projects, and then a long project development cycle. As such, limited results are expected to be generated in 2013. The majority of the results are expected in 2014 with a much reduced benefit to cumulative energy savings targets.
- Delays with processing funding payments have caused delayed payments to Participants beyond contract requirements. In some cases, LDCs have developed a separate side agreement between the LDC and Participant acknowledging that the Participant cannot be paid until the funds are received.
- The contract required for PSUI is a lengthy and complicated document. A key to making PSUI successful is a new agreement which is a simplified with less onerous conditions for the customer.
- To partially address this, changes were made to the ERII Initiative which allowed smaller projects to be directed to the Commercial stream. Most industrial projects to-date have been submitted as ERII projects due to less onerous contract and M&V requirements.
- A business case was submitted by the Industrial Working Group in July 2012 which would change the upper limit for a small project from 700 MWh to 1 million dollars in incentives. This would allow more projects to be eligible for the new small capital project agreement and increase participant uptake, while still protecting the ratepayer. This small capital project agreement was finalized in August 2013.
- While there is considerable customer interest in on-site Load Displacement (Co-Generation) projects, in 2012 the OPA was accepting waste heat/waste fuel projects only. Natural gas generation projects were on hold

awaiting a decision on whether PSUI will fund these types of projects. In June 2013, a decision was made to allow natural gas load displacement generation projects to proceed under PSUI. It is expected that a number of projects will proceed although results may not be counted towards LDC targets due to in-service dates beyond 2014.

- The requirement to have a customer invoice the LDC for their incentive is very burdensome for the customer and results in a negative customer experience and another barrier to participation.

2.2.3.2 *Monitoring & Targeting Initiative (Schedule D-2)*

Initiative Activities/Progress:

- Regularly promoted during discussions with non-residential accounts where internal metering is lacking and only when the load is large enough to accommodate the annual savings targets of the initiative.
- Promotion on corporate website throughout 2013.

Additional Comments:

- The M&T initiative is targeted at 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.
- The savings target required for this Initiative can present a significant challenge for smaller customers.
- Changes were made to ERII in 2013 to allow smaller facilities to employ M&T systems.

2.2.3.3 *Energy Manager Initiative (Schedule D-3)*

Initiative Activities/Progress:

- Regularly promoted during discussions with non-residential accounts when the customer/facility load is large enough to accommodate the annual savings targets of the initiative and the customer is lacking internal resources who identify energy efficiency opportunities and manage these projects.
- Promotion on corporate website throughout 2013.

Additional Comments:

- The Embedded Energy Manager Welland Hydro-Electric System Corp. secured for Niagara College was extremely successful in their first year as they achieved 270 kW of peak demand savings and 1,554,000 kWh in energy savings. In addition, 90% of these savings came from non-incented projects which show the enormous value from having these types of resources within facilities.
- The Energy Managers have proven to be a popular and useful resource for larger customers.

- LDCs that are too small to qualify for their own REM are teaming up with other utilities to hire an REM to be shared by the group of utilities.
- Some LDCs and Customers are reporting difficulties in hiring capable Roving and Embedded Energy Managers (REM/EEM), 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”. Energy Managers started filling their pipeline with projects in 2012 but few projects were implemented until 2013.

2.2.3.4 Key Account Manager (Schedule D-4)

Initiative Activities/Progress:

- Welland Hydro-Electric System Corp. continued to be part of a joint LDC application sharing a Key Account Manager (KAM) resource with other area LDCs.
- Welland Hydro-Electric System Corp. believes it is very fortunate to have access to a KAM. This resource has been an extremely valuable asset by providing us, and our large customers, with extensive technical knowledge.

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 discourages some skilled applicants resulting in longer lead times to acquire the right resource.

2.2.3.5 Demand Response 3 (D-6)

Initiative Activities/Progress:

- Continued to aggressively market this initiative to our largest customers via face-to-face meetings.
- Promotion on corporate website throughout 2013.

Additional Comments:

- 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.
- No program improvements were made in 2013 however, it was accepted that prior participants who renew their DR3 contract within the 2011-2014 term will contribute to LDC targets.
- As of 2013, Aggregators were able to enter into contracts beyond 2014 which has allowed them to offer a more competitive contract price (5 year) than if limited to 1 or 2 year contracts.
- Metering and settlement requirements are expensive and complicated and can reduce customer compensation amounts, and present a barrier to smaller customers.
- Compensation amounts for new contracts and renewals have been reduced from the initial launch of this program (premium zones and 200 hour option have been discontinued) and subsequently there has been a corresponding decrease in renewal revenue.

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

Initiative Activities/Progress:

- Attendance at select community event to promote the initiative.
- Promotional inserts as part of monthly unaddressed coupon/informational mailers (distribution to approximately 25,000 residents per month).
- 49 ads throughout the year in local newspapers (circulation approximately 25,000 per ad).
- Focused on social housing and cooperative building owners/managers.
- Promotion on corporate website throughout 2013.

Additional Comments:

- The process for enrolling in social housing was complicated and time consuming. This was addressed in late 2012 and showed some benefits in 2013.
- The financial scope, complexity, and customer privacy requirements of this Initiative are challenging for LDCs and most have contracted this program out. This Initiative may benefit from an OPA contracted centralized delivery agent.

2.2.5 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 B

3 2013 LDC CDM Results

3.1 Participation and Savings

Table 1a: Welland Hydro-Electric System Corp. Initiative and Program Level Savings by Year (Scenario 1) – assumes DR3 resources do not remain in place in 2014

Table 1a: Welland Hydro-Electric System Corp. Initiative and Program Level Net Savings by Year (Scenario 1)

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)				Program-to-Date Verified Progress to Target (excludes DR)	
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2014 Net Annual Peak Demand Savings (kW)	2011-2014 Net Cumulative Energy Savings (kWh)
														2014	2014
Consumer Program															
Appliance Retirement	Appliances	237	165	75		14	9	5		97,173	66,238	32,234		28	651,670
Appliance Exchange	Appliances	24	15	26		3	2	5		3,288	4,084	9,605		9	43,401
HVAC Incentives	Equipment	421	382	365		131	81	75		234,498	137,943	126,555		287	1,604,932
Conservation Instant Coupon Booklet	Items	2,012	120	1,346		5	1	2		74,370	5,423	29,897		7	373,544
Bi-Annual Retailer Event	Items	3,693	4,115	3,665		7	6	5		113,991	103,883	66,639		17	900,891
Retailer Co-op	Items	0	0	0		0	0	0		0	0	0		0	0
Residential Demand Response	Devices	106	0	0		59	0	0		0	0	0		0	0
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Residential New Construction	Homes	0	0	0		0	0	0		0	0	0		0	0
Consumer Program Total						218	100	91		523,319	317,572	264,930		349	3,574,438
Business Program															
Retrofit	Projects	12	22	50		32	60	330		207,423	257,314	2,543,024		419	6,675,857
Direct Install Lighting	Projects	113	35	72		109	27	70		285,191	105,744	238,953		164	1,801,910
Building Commissioning	Buildings	0	0	0		0	0	0		0	0	0		0	0
New Construction	Buildings	0	0	1		0	0	31		0	0	190,453		31	380,905
Energy Audit	Audits	0	9	0		0	41	0		0	201,410	0		41	604,230
Small Commercial Demand Response	Devices	0	0	0		0	0	0		0	0	0		0	0
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Demand Response 3	Facilities	1	1	2		41	41	201		1,599	597	3,276		0	5,472
Business Program Total						182	170	633		494,214	565,065	2,975,705		656	9,468,374
Industrial Program															
Process & System Upgrades	Projects	0	0	0		0	0	0		0	0	0		0	0
Monitoring & Targeting	Projects	0	0	0		0	0	0		0	0	0		0	0
Energy Manager	Projects	0	0	8		0	0	202		0	0	910,843		184	1,803,491
Retrofit	Projects	1	0	0		6	0	0		42,733	0	0		6	170,931
Demand Response 3	Facilities	0	1	2		0	5,675	5,366		0	136,755	122,186		0	258,941
Industrial Program Total						6	5,675	5,568		42,733	136,755	1,033,029		190	2,233,362
Home Assistance Program															
Home Assistance Program	Homes	36	98	168		2	11	7		30,147	106,478	87,261		19	614,294
Home Assistance Program Total						2	11	7		30,147	106,478	87,261		19	614,294
Aboriginal Program															
Home Assistance Program	Homes	0	0	0		0	0	0		0	0	0		0	0
Direct Install Lighting	Projects	0	0	0		0	0	0		0	0	0		0	0
Aboriginal Program Total						0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011															
Electricity Retrofit Incentive Program	Projects	9	0	0		161	0	0		927,188	0	0		161	3,708,753
High Performance New Construction	Projects	0	0	0		0	0	0		1,176	425	0		1	5,978
Toronto Comprehensive	Projects	0	0	0		0	0	0		0	0	0		0	0
Multifamily Energy Efficiency Rebates	Projects	0	0	0		0	0	0		0	0	0		0	0
LDC Custom Programs	Projects	0	0	0		0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011 Total						162	0	0		928,364	425	0		162	3,714,730
Other															
Program Enabled Savings	Projects	0	0	0		0	0	0		0	0	0		0	0
Time-of-Use Savings	Homes	0	0	0		0	0	0		0	0	0		0	0
Other Total						0	0	0		0	0	0		0	0
Adjustments to 2011 Verified Results							95	0			279,457	0		73	1,051,853
Adjustments to 2012 Verified Results								30				123,879		30	371,020
Energy Efficiency Total						470	240	731		2,017,177	988,942	4,235,464		1,376	19,340,786
Demand Response Total (Scenario 1)						100	5,716	5,567		1,599	137,352	125,462		0	264,413
Adjustments to Previous Years' Verified Results Total						0	95	30		0	279,457	123,879		103	1,422,873
OPA-Contracted LDC Portfolio Total (inc. Adjustments)						570	6,051	6,328		2,018,776	1,405,751	4,484,805		1,479	21,028,072
Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).		The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.								Full OEB Target:				5,560	20,600,000
*Includes adjustments after Final Reports were issued		Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated								% of Full OEB Target Achieved to Date (Scenario 1):				26.6%	102.1%

Table 2b: Welland Hydro-Electric System Corp. Initiative and Program Level Savings by Year (Scenario 2) – assumes DR3 resources do remain in place in 2014

Table 1b: Welland Hydro-Electric System Corp. Initiative and Program Level Net Savings by Year (Scenario 2)

Initiative	Unit	Incremental Activity (new program activity occurring within the specified reporting period)				Net Incremental Peak Demand Savings (kW) (new peak demand savings from activity within the specified reporting period)				Net Incremental Energy Savings (kWh) (new energy savings from activity within the specified reporting period)				Program-to-Date Verified Progress to Target (excludes DR)	
		2011*	2012*	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2014 Net Annual Peak Demand Savings (kW)	2011-2014 Net Cumulative Energy Savings (kWh)
Consumer Program															
Appliance Retirement	Appliances	237	165	75		14	9	5		97,173	66,238	32,234		28	651,670
Appliance Exchange	Appliances	24	15	26		3	2	5		3,288	4,084	9,605		9	43,401
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Bi-Annual Retailer Event	Items	3,693	4,115	3,665		7	6	5		113,991	103,883	66,639		17	900,891
Retailer Co-op	Items	0	0	0		0	0	0		0	0	0		0	0
Residential Demand Response	Devices	106	0	0		59	0	0		0	0	0		0	0
Residential Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Residential New Construction	Homes	0	0	0		0	0	0		0	0	0		0	0
Consumer Program Total						218	100	91		523,319	317,572	264,930		349	3,574,438
Business Program															
Retrofit	Projects	12	22	50		32	60	330		207,423	257,314	2,543,024		419	6,675,857
Direct Install Lighting	Projects	113	35	72		109	27	70		285,191	105,744	238,953		164	1,801,910
Building Commissioning	Buildings	0	0	0		0	0	0		0	0	0		0	0
New Construction	Buildings	0	0	1		0	0	31		0	0	190,453		31	380,905
Energy Audit	Audits	0	9	0		0	41	0		0	201,410	0		41	604,230
Small Commercial Demand Response	Devices	0	0	0		0	0	0		0	0	0		0	0
Small Commercial Demand Response (IHD)	Devices	0	0	0		0	0	0		0	0	0		0	0
Demand Response 3	Facilities	1	1	2		41	41	201		1,599	597	3,276		0	5,472
Business Program Total						182	170	633		494,214	565,065	2,975,705		656	9,468,374
Industrial Program															
Process & System Upgrades	Projects	0	0	0		0	0	0		0	0	0		0	0
Monitoring & Targeting	Projects	0	0	0		0	0	0		0	0	0		0	0
Energy Manager	Projects	0	0	8		0	0	202		0	0	910,843		184	1,803,491
Retrofit	Projects	1	0	0		6	0	0		42,733	0	0		6	170,931
Demand Response 3	Facilities	0	1	2		0	5,675	5,366		0	136,755	122,186		0	258,941
Industrial Program Total						6	5,675	5,568		42,733	136,755	1,033,029		190	2,233,362
Home Assistance Program															
Home Assistance Program	Homes	36	98	168		2	11	7		30,147	106,478	87,261		19	614,294
Home Assistance Program Total						2	11	7		30,147	106,478	87,261		19	614,294
Aboriginal Program															
Home Assistance Program	Homes	0	0	0		0	0	0		0	0	0		0	0
Direct Install Lighting	Projects	0	0	0		0	0	0		0	0	0		0	0
Aboriginal Program Total						0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011															
Electricity Retrofit Incentive Program	Projects	9	0	0		161	0	0		927,188	0	0		161	3,708,753
High Performance New Construction	Projects	0	0	0		0	0	0		1,176	425	0		1	5,978
Toronto Comprehensive	Projects	0	0	0		0	0	0		0	0	0		0	0
Multifamily Energy Efficiency Rebates	Projects	0	0	0		0	0	0		0	0	0		0	0
LDC Custom Programs	Projects	0	0	0		0	0	0		0	0	0		0	0
Pre-2011 Programs completed in 2011 Total						162	0	0		928,364	425	0		162	3,714,730
Other															
Program Enabled Savings	Projects	0	0	0		0	0	0		0	0	0		0	0
Time-of-Use Savings	Homes	0	0	0		0	0	0		0	0	0		0	0
Other Total						0	0	0		0	0	0		0	0
Adjustments to 2011 Verified Results								95			279,457	0		73	1,051,853
Adjustments to 2012 Verified Results								30				123,879		30	371,020
Energy Efficiency Total						470	240	731		2,017,177	988,942	4,235,464		1,376	19,340,786
Demand Response Total (Scenario 1)						100	5,716	5,567		1,599	137,352	125,462		0	264,413
Adjustments to Previous Years' Verified Results Total						0	95	30		0	279,457	123,879		103	1,422,873
OPA-Contracted LDC Portfolio Total (inc. Adjustments)						570	6,051	6,328		2,018,776	1,405,751	4,484,805		7,047	21,028,072
Activity and savings for Demand Response resources for each year represent the savings from all active facilities or devices contracted since January 1, 2011 (reported cumulatively).												The IHD line item on the 2013 annual report has been left blank pending a results update from evaluations; results will be updated once sufficient information is made available.			
*Includes adjustments after Final Reports were issued												Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated			
												Full OEB Target:			
												5,560			
												20,600,000			
												126.7%			
												102.1%			
												% of Full OEB Target Achieved to Date (Scenario 1):			

Table 3a: Welland Hydro-Electric System Corp. Summarized 2013 Program Results (Scenario 1)

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	0.183	445.571	0.091	264.930	0.349	3,574.438
Business Program Total	0.656	4,652.131	0.432	2,975.705	0.656	9,468.374
Industrial Program Total	0.249	1,124.498	0.202	1,033.029	0.190	2,233.362
Home Assistance Program Total	0.006	98.046	.007	87.261	0.019	614.294
Pre-2011 Programs completed in 2011 Total	0	0	0	0	0.162	3,714.730
Other Adjustments	0.030	123.879	0.030	123.879	0.103	1,422.873
Total OPA Contracted Province-Wide CDM Programs	1.124	6,444.125	0.762	4,484.805	1.479	21,028.072

Table 4b: Welland Hydro-Electric System Corp. Summarized 2013 Program Results (Scenario 2)

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	0.183	445.571	0.091	264.930	0.349	3,574.438
Business Program Total	0.858	4,652.131	0.633	2,975.705	0.656	9,468.374
Industrial Program Total	5.615	1,124.498	5.568	1,033.029	5.711*	2,233.362
Home Assistance Program Total	0.006	98.046	.007	87.261	0.019	614.294
Pre-2011 Programs completed in 2011 Total	0	0	0	0	0.162	3,714.730
Other Adjustments	0.030	123.879	0.030	123.879	0.103	1,422.873
Total OPA Contracted Province-Wide CDM Programs	6.692	6,444.125	6.329	4,484.805	7.000*	21,028.072

* Peak demand including demand response resources. Calculation = (1.479 + ((5.675+5.366)/2))

3.2 Evaluation

To determine Welland Hydro-Electric System Corp.'s 2011, 2012 and 2013 net demand and energy savings, the OPA has adjusted our gross results using the values as outlined below. Information explaining additional reductions to our 2011, 2012 and 2013 net demand and energy savings and their contributions to our 2011 – 2014 targets has not been provided.

Table : Welland Hydro-Electric System Corp. Realization Rate & NTG

Initiative	Peak Demand Savings								Energy Savings							
	Realization Rate				Net-to-Gross Ratio				Realization Rate				Net-to-Gross Ratio			
	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014	2011	2012	2013	2014
Consumer Program																
Appliance Retirement	1.00	1.00	n/a		0.50	0.46	0.42		1.00	1.00	n/a		0.51	0.47	0.44	
Appliance Exchange	1.00	1.00	1.00		0.52	0.52	0.53		1.00	1.00	1.00		0.52	0.52	0.53	
HVAC Incentives	1.00	1.00	n/a		0.61	0.50	0.48		1.00	1.00	n/a		0.60	0.49	0.48	
Conservation Instant Coupon Booklet	1.00	1.00	1.00		1.14	1.00	1.11		1.00	1.00	1.00		1.11	1.05	1.13	
Bi-Annual Retailer Event	1.00	1.00	1.00		1.13	0.91	1.04		1.00	1.00	1.00		1.10	0.92	1.04	
Retailer Co-op	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Residential New Construction	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Business Program																
Retrofit	0.92	0.76	1.00		0.74	0.74	0.67		1.28	1.01	0.96		0.77	0.76	0.66	
Direct Install Lighting	1.08	0.68	0.81		0.93	0.94	0.94		0.90	0.85	0.84		0.93	0.94	0.94	
Building Commissioning	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
New Construction	n/a	n/a	0.81		n/a	n/a	0.54		n/a	n/a	1.05		n/a	n/a	0.54	
Energy Audit	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Small Commercial Demand Response	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Small Commercial Demand Response (IHD)	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Demand Response 3	0.76	n/a	n/a		n/a	n/a	n/a		1.00	n/a	n/a		n/a	n/a	n/a	
Industrial Program																
Process & System Upgrades	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Monitoring & Targeting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Energy Manager	n/a	n/a	0.90		n/a	n/a	0.90		n/a	n/a	0.90		n/a	n/a	0.90	
Retrofit																
Demand Response 3	0.84	n/a	n/a		n/a	n/a	n/a		1.00	n/a	n/a		n/a	n/a	n/a	
Home Assistance Program																
Home Assistance Program	1.00	1.08	1.07		0.70	1.00	1.00		1.00	1.02	0.89		0.70	1.00	1.00	
Aboriginal Program																
Home Assistance Program	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Direct Install Lighting	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Pre-2011 Programs completed in 2011																
Electricity Retrofit Incentive Program	0.77	n/a	n/a		0.52	n/a	n/a		0.77	n/a	n/a		0.52	n/a	n/a	
High Performance New Construction	1.00	1.00	1.00		0.50	0.50	0.50		1.00	1.00	1.00		0.50	0.50	0.50	
Toronto Comprehensive	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Multifamily Energy Efficiency Rebates	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
LDC Custom Programs	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Other																
Program Enabled Savings	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
Time-of-Use Savings	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	

Energy Manager, Aboriginal Program and Program Enabled Savings were not independently evaluated

3.3 Spending

Table 3 and 4 summarize the total spending by initiative that Welland Hydro-Electric System Corp. has incurred in 2013 and cumulatively since 2011. It is detailed by the Program Administration Budget (PAB), Participant Based Funding (PBF), Participant Incentives (PI) and Capability Building Funding (CBF).

Table 3: 2013 Spending

Initiative	PAB	PBF	PI	CBF	TOTAL
Consumer Program					
Appliance Retirement	15,055.18	0	0	0	15,055.18
Appliance Exchange	0	0	0	0	0
HVAC Incentives	18,151.98	0	0	0	18,151.98
Annual Coupons	0	0	0	0	0
Bi-Annual Retailer Event	0	0	0	0	0
Retailer Co-op	0	0	0	0	0
Residential Demand Response	2,573.56	0	0	0	2,573.56
New Construction Program	4,091.53	0	0	0	4,091.53
Business Program					
Equipment Replacement	153,907.13	0	394,153.66	0	548,060.79
Direct Installed Lighting	12,466.67	18,378.00	93,452.25	0	124,296.92
Existing Building Commissioning Incentive	0	0	0	0	0
New Construction and Major Renovation Initiative	10,873.22	4,308.00	8,300.00	0	23,481.22
Energy Audit	12,747.06	0	0	0	12,747.06
Small Commercial Demand Response	0	0	0	0	0
Demand Response 3	0	0	0	0	0
Industrial Program					
Process & System Upgrades					
a) preliminary engineering study	3,728.59	0	0	0	3,728.59
b) detailed engineering study	4,228.59	0	0	0	4,228.59
c) program incentive	0	0	0	0	0
Monitoring & Targeting	0	0	0	0	0
Energy Manager	2,467.81	0	0	0	2,467.81
Key Account Manager ("KAM")	71.34	0	0	0	71.34
Equipment Replacement	0	0	0	0	0
Demand Response 3	5,335.96	0	0	0	5,335.96
Home Assistance Program					
Home Assistance Program	(6,782.72)	35,510.00	30,222.36	0	58,949.64
TOTAL SPENDING	238,915.90	58,196.00	526,128.27	0	823,240.17

Table 4: Cumulative Spending (2011-2014)

Initiative	PAB	PBI	PI	CBF	TOTAL
Consumer Program					
Appliance Retirement	43,672.25	0	0	0	43,672.25
Appliance Exchange	222.25	0	0	0	222.25
HVAC Incentives	37,789.13	0	0	0	37,789.13
Annual Coupons	0	0	0	0	0
Bi-Annual Retailer Event	0	0	0	0	0
Retailer Co-op	0	0	0	0	0
Residential Demand Response	46,439.86	39,990.00	2,300.00	0	88,729.86
New Construction Program	7,611.11	0	0	0	7,611.11
Business Program					
Equipment Replacement	248,584.50	0	524,087.37	0	772,671.87
Direct Installed Lighting	24,553.99	57,110.00	243,757.00	0	325,420.99
Existing Building Commissioning Incentive	0	0	0	0	0
New Construction and Major Renovation Initiative	14,506.20	4,308.00	8,300.00	0	27,114.20
Energy Audit	28,226.08	0	15,245.50	0	43,471.58
Small Commercial Demand Response	0	0	0	0	0
Demand Response	0	0	0	0	0
Industrial Program					
Process & System Upgrades					
a) preliminary engineering study	3,734.84	0	0	0	3,734.84
b) detailed engineering study	6,639.51	0	42,300.00	0	48,939.51
c) program incentive	662.98	0	0	0	662.98
Monitoring & Targeting	6.25	0	0	0	6.25

Energy Manager	7,370.81	0	0	0	7,370.81
Key Account Manager ("KAM")	71.34	0	0	0	71.34
Equipment Replacement Incentive	0	0	0	0	0
Demand Response 3	7,280.67	0	0	0	7,280.67
Home Assistance Program					
Home Assistance Program	40,595.83	60,910.00	80,488.66	0	181,994.49
Pre 2011 Programs					
Electricity Retrofit Incentive Program	0	5,800.00	330,953.29	0	336,753.29
High Performance New Construction	0	0	0	0	0
Multifamily Energy Efficiency Rebates	0	0	0	0	0
Initiatives Not In Market					
Midstream Electronics	0				0
Midstream Pool Equipment	0				0
Demand Service Space Cooling	94.50				94.50
Demand Response 1	0				0
Home Energy Audit Tool	0				0
TOTAL SPENDING	518,062.10	168,118.00	1,247,431.82	0	1,933,611.92

3.4 Additional Comments

While the OPA does provide LDCs with EM&V ratios/values, this process is still lacking transparency. LDCs are held accountable for these results, yet are completely removed from the process in terms of how the EM&V ratios/values assigned to a particular LDC for specific initiatives are derived.

Welland Hydro-Electric System Corp. has included further comments regarding OPA-Contracted Province-Wide CDM Initiatives within each specific Initiative as described in Section 2 of this document.

4 Combined CDM Reporting Elements

4.1 Progress Towards CDM Targets

Table 5a: Net Peak Demand Savings at the End User Level (MW) – Scenario 1

Implementation Period	Annual (MW)			
	2011	2012	2013	2014
2011 – Verified by OPA	0.570			
2012 – Verified by OPA		0.376		
2013 – Verified by OPA			0.963	
2014				
Verified Net Annual Peak Demand Savings in 2014:				1.479
WELLAND HYDRO-ELECTRIC SYSTEM CORP. 2014 Annual CDM Capacity Target:				5.56
Verified Portion of Peak Demand Savings Target Achieved (%):				26.6%

Table 5b: Net Peak Demand Savings at the End User Level (MW) – Scenario 2

Implementation Period	Annual (MW)			
	2011	2012	2013	2014
2011 – Verified by OPA	0.570			
2012 – Verified by OPA		6.051		
2013 – Verified by OPA			6.329	
2014				
Verified Net Annual Peak Demand Savings in 2014:				7.000*
WELLAND HYDRO-ELECTRIC SYSTEM CORP. 2014 Annual CDM Capacity Target:				5.56
Verified Portion of Peak Demand Savings Target Achieved (%):				126.7%

* Peak demand including demand response resources. Calculation = $(1.479 + ((5.675+5.366)/2))$

Table 6: Net Energy Savings at the End-User Level (GWh)

Implementation Period	Annual (GWh)				Cumulative (GWh)
	2011	2012	2013	2014	2011-2014
2011 – Verified by OPA	2.018776				7.9
2012 – Verified by OPA		1.405752			4.2
2013 – Verified by OPA			4.484805		8.9
2014					
Verified Net Cumulative Energy Savings 2011-2014:					21.028
WELLAND HYDRO-ELECTRIC SYSTEM CORP. 2011-2014 Cumulative CDM Energy Target:					20.6
Verified Portion of Cumulative Energy Target Achieved (%):					102.1%

4.2 Variance from Strategy

As a result of Welland Hydro-Electric System Corp.’s effective Demand Response 3 marketing efforts in 2012, we continue to realize significantly higher than estimated results in peak demand reductions. The contracted demand response initiative was the primary reason we were able to achieve, and surpass, our 2014 peak demand target. On the energy side, we had a great year that saw several large projects come to completion in 2013. In addition, the Embedded Energy Manager at Niagara College was extremely successful in their first year, allowing Welland Hydro-Electric System Corp. to exceed its 2014 energy target by the end of 2013.

4.3 Outlook to 2014 and Strategy Modifications

Welland Hydro-Electric System Corp. has already exceeded both our 2011 – 2014 peak demand target and our 2011 – 2014 energy target. Therefore, Welland Hydro-Electric System Corp. does not feel it is necessary to revise its original CDM Strategy document at this time. Going forward, we will continue our efforts on assisting our commercial, institutional and industrial customers with a focus on identifying opportunities for long term efficiency gains on deeper measures.

That being said, on March 31st, 2014 the Minister of Energy issued a directive entitled “Continuance of the OPA’s Demand Response Program under IESO management” which effectively halts new customer enrollments and

existing customer re-enrollments, in the DR3 program until the IESO has a program in market (which is estimated to be some time in 2015).

The DR3 Initiative is a significant contributor to helping LDCs achieve their demands savings target. The program has taken some time to get traction and LDCs have been diligently working with their customers to encourage participation in the DR3 program. LDC customers are now in a position where many of them have contracted with an Aggregator but will be unable to participate due to the inability of the Aggregator to receive additional contract schedules resulting in the current “pipeline” of potential DR contributors being stranded.

5 Conclusion

Over the course of 2013, Welland Hydro-Electric System Corp. has achieved **7.000* MW** in peak demand savings and **21.028 GWh** in energy savings, which represents **126.7%** and **102.1%** of Welland Hydro-Electric System Corp. 2014 target, respectively. These results are representative of a considerable effort expended by Welland Hydro-Electric System Corp., 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 aid results in a subsequent CDM term.

However, despite continuing improvements to existing programs Welland Hydro-Electric System Corp. faces uncertainty in the remaining year of the current CDM framework. With the current slate of available OPA Programs, and the potential consequences of the directive issued on March 31, 2014 (as noted in section 4.3 above), Welland Hydro-Electric System Corp. cannot afford any modifications to its current DR3 resources in 2014 that would significantly affect the amount of contracted demand, if it expects to maintain its current level in peak demand reduction.

Looking ahead there is limited opportunity to make valuable changes to the current program portfolios and have these changes reflected in LDC 2014 results. However, LDCs and the OPA can build on the strengths and key successes of the 2011-2014 programs to launch new programs which will meet the needs of the industry and consumers.

Appendix A: Initiative Descriptions

Residential Program

APPLIANCE RETIREMENT INITIATIVE (Exhibit D)

Target Customer Type(s): 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: Large refrigerators, large freezers, window air conditioners and portable dehumidifiers.

Delivery: OPA centrally contracts for the province-wide marketing, call centre, appliance pick-up and decommissioning process. LDC's provides local marketing and coordination with municipal pick-up where available.

Additional Detail: Schedule B-1, Exhibit D on the OPA extranet and SaveONEnergy website

In Market Date: March 1, 2011

APPLIANCE EXCHANGE INITIATIVE (Exhibit E)

Target Customer Type(s): 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 (AC) and dehumidifiers in exchange for coupons/discounts towards the purchase of new energy efficient equipment. Window ACs were discontinued from the program in 2013.

Targeted End Uses: Window air conditioners and portable dehumidifiers

Delivery: OPA contracts with participating retailers for collection of eligible units. LDCs provide local marketing.

Additional Detail: Schedule B-1, Exhibit C on the OPA extranet and SaveONenergy website

In Market Date: March 1, 2011

HVAC INCENTIVES INITIATIVE (Exhibit B)

Target Customer Type(s): 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 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 central air conditioners by approved Heating, Refrigeration, and Air Conditioning Institute (HRAI) qualified contractors.

Targeted End Uses: Central air conditioners and furnaces

Delivery: OPA contracts centrally for delivery of the program. LDCs provide local marketing and encourage local contractors to participate in the Initiative.

Additional Detail: Schedule B-1, Exhibit B on the OPA extranet and SaveONenergy website

In Market Date: March 1, 2011

CONSERVATION INSTANT COUPON INITIATIVE (Exhibit A)

Target Customer Type(s): Residential Customers

Initiative Frequency: Year round

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

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

Targeted End Uses: ENERGY STAR® qualified Standard Compact Fluorescent Lights (“CFLs”), ENERGY STAR® 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, baseboard programmable thermostats.

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

Additional Detail: Schedule B-1, Exhibit A on the OPA extranet and SaveONEnergy website

In Market Date: March 1, 2011

BI-ANNUAL RETAILER EVENT INITIATIVE (Exhibit C)

Target Customer Type(s): 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: As per the Conservation Instant Coupon Initiative

Delivery: The OPA enters into arrangements with participating retailers to promote the discounted products, and to post and honour related coupons. LDCs also refer retailers to the OPA and market this initiative locally.

Additional Detail: Schedule B-1, Exhibit C on the OPA extranet and saveONEnergy website

In Market Date: March 2011

In Market Date: March 1, 2011

RETAILER CO-OP

Target Customer Type(s): Residential Customers

Initiative Frequency: Year Round

Objective: Hold promotional events to encourage customers to purchase energy efficiency measures (and go above-and-beyond the traditional Bi-Annual Coupon Events).

Description: The Retailer Co-op Initiative provides LDCs with the opportunity to work with retailers in their service area by holding special events at retail locations. These events are typically special promotions that encourage customers to purchase energy efficiency measures (and go above-and-beyond the traditional Bi-Annual Coupon Events).

Targeted End Uses: As per the Conservation Instant Coupon Initiative

Delivery: Retailers apply to the OPA for co-op funding to run special promotions that promote energy efficiency to customers in their stores. LDCs can refer retailers to the OPA. The OPA provides each LDC with a list of retailers who have qualified for Co-Op Funding as well as details of the proposed special events.

In Market Date: March 1, 2011

NEW CONSTRUCTION PROGRAM (Schedule B-2)

Target Customer Type(s): Residential Customers

Initiative Frequency: Year round

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

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

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

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

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

Additional Detail: Schedule B-1, Exhibit C on the OPA extranet and SaveONEnergy website

In Market Date: March 1, 2011

RESIDENTIAL DEMAND RESPONSE PROGRAM (Schedule B-3)

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 IESO-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).

Targeted End Uses: central air conditioning, electric hot water heaters and pool pumps

Delivery: LDC's recruit customers and procure technology

Additional Detail: Schedule B-1, Exhibit C on the OPA extranet and SaveONEnergy website

In Market Date: Not in market in 2013

C&I Program

EFFICIENCY: EQUIPMENT REPLACEMENT INCENTIVE (ERII) (Schedule C-2)

Target Customer Type(s): 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 into 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, ventilation and other measures

Delivery: LDC delivered.

Additional Detail: Schedule C-2 on the OPA extranet and saveONenergy website

In Market Date: March 18, 2011

Lessons Learned:

DIRECT INSTALL INITIATIVE (DIL) (Schedule C-3)

Target Customer Type(s): 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 small 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: Schedule C-3 on the OPA extranet and SaveONenergy website

Initiative Activities/Progress:

In Market Date: March 2, 2011

EXISTING BUILDING COMMISSIONING INCENTIVE INITIATIVE (Schedule C-6)

Target Customer Type(s): 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: Schedule C-6 on the OPA extranet and SaveONenergy website Additional detail is available:

Initiative Activities/Progress:

In Market Date: March 1, 2011

NEW CONSTRUCTION AND MAJOR RENOVATION INITIATIVE (HPNC) (Schedule C-4)

Target Customer Type(s): Commercial, Institutional, Agricultural and Industrial Customers

Initiative Frequency: Year round

Objective: The objective of this Initiative is to encourage builders/major renovators 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: New building construction, building modeling, lighting, space cooling, ventilation and other Measures

Delivery: LDC delivers to customers and design decision makers.

Additional Detail: Schedule C-4 on the OPA extranet and SaveONenergy website

Initiative Activities/Progress:

In Market Date: January 17, 2012

ENERGY AUDIT INITIATIVE (Schedule C-1)

Target Customer Type(s): 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 the facility. Energy audits include development of energy baselines, use assessments and performance monitoring and reporting.

Targeted End Uses: Various

Delivery: LDC delivered.

Additional Detail: Schedule C-1 on the OPA extranet Schedule C-1 and SaveONenergy website

<https://saveonenergy.ca/Business/Program-Overviews/Audit-Funding.aspx>

Initiative Activities/Progress:

In Market Date: March 1, 2011

Industrial Program

PROCESS & SYSTEMS UPGRADES INITIATIVE (PSUI) (Schedule D-1)

Target Customer Type(s): 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 project 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 costs
- c) A one year pay back

Targeted End Uses: Process and systems

Delivery: LDC delivered with Key Account Management support, in some cases.

Additional Detail: Schedule D-1 on the OPA extranet and saveONenergy website
<https://saveonenergy.ca/Business.aspx>

In Market Date: May 31, 2011

MONITORING & TARGETING INITIATIVE (Schedule D-2)

Target Customer Type(s): 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 sustained 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: Process and systems

Delivery: LDC delivered with Key Account Management support, in some cases.

Additional Detail: Schedule D-2 on the OPA extranet and saveONenergy website
<https://saveonenergy.ca/Business.aspx>

In Market Date: May 31, 2011

ENERGY MANAGER INITIATIVE (Schedule D-3)

Target Customer Type(s): 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.

Targeted End Uses: Process and systems

Delivery: LDC delivered with Key Account Management support, in some cases.

Additional Detail: Schedule D-3 on the OPA extranet and SaveONenergy website
<https://saveonenergy.ca/Business.aspx>

In Market Date: May 31, 2011

KEY ACCOUNT MANAGER (KAM) (Schedule D-4)

Target Customer Type(s): Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

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.

Description: This Initiative provides LDCs the opportunity to utilize a KAM to assist their customers. 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: Process and systems

Delivery: LDC delivered

Additional Detail: Scheduled-4 on the OPA extranet.

In Market Date: August 2011

DEMAND RESPONSE 3 (Schedule D-6)

Target Customer Type(s): Industrial, Commercial, Institutional and Agricultural Customers

Initiative Frequency: Year round

Objective: This Initiative provides for Demand Response (“DR”) payments to contracted participants to compensate them for reducing their electricity consumption by a pre-defined amount during a DR event.

Description: Demand Response 3 (“DR3”) 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 DR3 Initiative is a contractual resource that is an economic alternative to procurement of new generation capacity. DR3 comes with specific contractual obligations requiring participants to reduce their use of electricity relative to a baseline when called upon. This Initiative makes payments for participants to be on standby and payments for the actual electricity 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: Commercial and Industrial Operations

Delivery: DR3 is delivered by Demand Response Providers (“DRPs”), under contract to the OPA. The OPA administers contracts with all DRPs and Direct Participants (who provide in excess of 5 MW of demand response capacity). OPA provides administration including settlement, measurement and verification, and dispatch. LDCs are responsible for local customer outreach and marketing efforts.

Additional Detail: Schedule D-6 available on the OPA and SaveONEnergy website
<https://saveonenergy.ca/Business.aspx>

In Market Date: June 3, 2011

It is noted that while the Schedule for this Initiative was not posted until May 2011, the Aggregators reported that they were able to enroll customers as of January 2011.

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

Target Customer Type(s): Income Qualified Residential Customers

Initiative Frequency: Year Round

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 use measures based on results of audit (i.e. compact fluorescent light bulbs)

Delivery: LDC delivered.

Additional Detail: Schedule E available on the OPA extranet.

Initiative Activities/Progress:

BPI took the lead on a group RFP for Home Assistance Program provider in 2011. Due to the delay in schedule release, and the time required for the RFP process, BPI was not in market in 2011, however launched in early 2012.

In Market Date: July 28, 2011

Appendix B: Pre-2011 Programs

ELECTRICITY RETROFIT INCENTIVE PROGRAM

Target Customer Type(s): Commercial, Institutional, and Agricultural 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 Program (ERIP) offered financial incentives to customers for the upgrade of existing equipment to energy efficient equipment. This program was available in 2010 and allowed customers up to 11 months following Pre-Approval to complete their projects. As a result, a number of projects Pre-Approved in 2010 were not completed and in-service until 2011. The electricity savings associated with these projects are attributed to 2011.

Targeted End Uses: Electricity savings measures

Delivery: LDC Delivered

HIGH PERFORMANCE NEW CONSTRUCTION

Target Customer Type(s): Commercial, Institutional, and Agricultural Customers

Initiative Frequency: Year round

Objective: The High Performance New Construction Initiative provided incentives for new buildings to exceed existing codes and standards for energy efficiency. The Initiative uses both a prescriptive and custom approach and was delivered by Enbridge Gas under contract with the OPA (and subcontracted to Union Gas), which ran until December 2010.

Description: 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.

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

Delivery: Through Enbridge Gas (and subcontracted to Union Gas)

MULTIFAMILY ENERGY EFFICIENCY REBATES

Target Customer Type(s): Residential Multi-unit buildings

Initiative Frequency: Year round

Objective: Improve energy efficiency of Multi-unit building

Description: OPA's Multifamily Energy Efficiency Rebates (MEER) Initiative applies to multifamily buildings of six units or more, including rental buildings, condominiums, and assisted social housing. The OPA contracted with GreenSaver to deliver the MEER Initiative outside of the Toronto Hydro service territory. Activities delivered in Toronto were contracted with the City.

Similar to ERII and ERIP, MEER provides financial incentives for prescriptive and custom measures, but also funds resident education. Unlike ERII, where incentives are paid by the LDC, all incentives through MEER are paid through the contracted partner (i.e. GreenSaver).

Targeted End Uses: Electricity saving measures

Delivery: OPA contracted with Greensaver