

# **RIDEAU ST. LAWRENCE DISTRIBUTION INC.**

## **LRAMVA SUPPORT**

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## Executive Summary

Burman Energy Consultants group has calculated Rideau St. Lawrence Distribution's LRAMVA value for the period of 2012 through 2014 to be a total of \$24,123.94 . This number was derived by calculating the total LRAM value of \$55,763.27 and subtracting the already forecasted lost revenue already collected of \$31,639.33 .

## Introduction

Since the completion of Third Tranche CDM programs and reporting, LDCs across Ontario have sought to recover revenues lost to successful CDM programming. The mechanism that enables this recovery is the Lost Revenue Adjustment Mechanism (LRAM).

On April 26, 2012, new Board-issued CDM Guidelines were enacted that provide updated LRAM details. For CDM programs delivered within the 2011 to 2014 term, the Board established the Lost Revenue Adjustment Variance Account (LRAMVA). This account captures the variance between the Board-approved CDM forecast and the actual CDM results.

The variance calculated from this comparison must be recorded in separate sub-accounts per the applicable customer rate classes.

LDCs must apply for the disposition of the balance in the LRAMVA as part of their cost of service (COS) applications or on an annual basis, as part of their IRM rate applications.

The LRAM mechanism determines persistent CDM impacts realized after 2010, for those distributors whose load forecast has not been updated.

## Terms

Term	Description
Persistence	CDM savings during the subsequent years after the first year savings.
Extension Framework	The conservation period between 2011 and 2015
Conservation First Framework	The conservation period between 2015 and 2020.
CDM	Conservation and Demand Management
LRAM	Lost Revenue Adjustment Mechanism
LRAMVA	Lost Revenue Adjustment Mechanism Variance Account
COS	Cost of Service
IRM	Incentive Regulation Model

## Scope of Work

Specifically, Burman Energy will perform the following in its work undertaking:

- 1) Collect and outline savings for the following data sets:
  - i. CDM Results for programs as applicable for the LRAMVA period.
  - ii. Forecasted savings for Conservation and Demand Management programs (Last Approved).
- 2) Collect additional data as outlined:
  - i. LDC volumetric distribution rates for LRAMVA years.
  - ii. Completed Retrofit projects for years for which retrofit savings are reported.
- 3) Calculate by initiative and year the lost revenue values.
- 4) Calculate the currently recovered lost revenue from the load forecast.
- 5) Outline the net LRAMVA values by year and overall.
- 6) Provide summary report with supporting information.

## About Burman Energy Consultants Group Inc.

Burman Energy is a vibrant, growing company, and has provided energy conservation program planning, administration and delivery services since the inception of IESO programs in 2007. Serving 39 CDM client LDCs in Ontario, we currently have over 30 staff with specialized expertise in CDM planning and program administration, marketing, technical review and support, quality control, and contractor management. In 2013, Bart Burman, President of Burman Energy, was inducted into Worldwide Who's Who for Excellence in Energy Consulting, and in 2014/15, Bart sits as chair of the EDA's Commercial Steering Committee.

Burman Energy has adopted a new structured approach to fulfilling its contracted obligations with our numerous and diverse LDC CDM clients. Recognizing, in practice, the significant peaks and valleys associated with sustaining a consistent high standard of service on time delivery, our organizational focus continues to be to ensure adequate and flexible staff resources. Cross training in several different aspects of program execution has historically enabled us to make this approach extremely effective in meeting our clients' timeliness criteria.

As a process centric organization, our starting point is to use stock, off the shelf, proven process designs, and adjust collaboratively, in discussion with you, our client, for your specific LDC protocols as required. From this common basis for understanding, identification of roles and associated accountabilities can be easily determined. In addition, this work, up front, provides for a more solid basis upon which to convey pricing options.

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## Lost Revenue Adjustment Mechanism History

From 2005 to the end of 2010, distributors delivered CDM programs either through approved distribution rate funding by way of the third installment of their incremental market adjusted revenue requirement ("MARR"), or through contracts with the IESO. Some distributors received incremental distribution rate funding separate from MARR. To promote the participation in and the delivery of CDM programs by distributors, the Board made available an LRAM regardless of whether the CDM programs were funded by the IESO or through distribution rates.

## Lost Revenue Adjustment Mechanism Outline

In preparation of this document, Burman Energy performed this analysis in compliance with Guidelines for Electricity Distributor Conservation and Demand Management EB-2012-0003 with specific reference to the following:

### 13.6 LRAM & Shared Savings Mechanism for Pre-CDM Code Activities

The Board notes that the Filing Requirements for Transmission and Distribution Applications state the following:

Distributors intending to file an LRAM or SSM application for CDM Programs funded through distribution rates, or an LRAM application for CDM Programs funded by the IESO between 2005 and 2010, shall do so as part of their 2012 rate application filings, either cost-of-service or IRM. If a distributor does not file for the recovery of LRAM or SSM amounts in its 2012 rate application, it will forego the opportunity to recover LRAM or SSM for this legacy period of CDM activity.

The 2008 CDM Guidelines state as follows: "lost revenues are only accruable until new rates (based on a new revenue requirement and load forecast) are set by the Board, as the CDM savings would be assumed to be incorporated in the load forecast at that time". The intent of the LRAM in the 2008 CDM Guidelines was to keep electricity distributors revenue neutral for CDM activities implemented by the distributor during the years in which its rates were set using the incentive regulation mechanism, and that future LRAM claims should be unnecessary once a distributor rebases and updates its load forecast.

The Board therefore expects that LRAM for pre-2011 CDM activities should be completed with the 2012 rate applications, outside of persisting historical CDM impacts realized after 2010 for those distributors whose load forecast has not been updated as part of a cost of service application.

This summary is extracted from the "Guidelines for Electricity Distributor Conservation and Demand Management" (EB-2012-0003). This document can be found at:

[http://www.ontarioenergyboard.ca/oeb/Documents/EB-2012-0003/CDM\\_Guidelines\\_Electricity\\_Distributor.pdf](http://www.ontarioenergyboard.ca/oeb/Documents/EB-2012-0003/CDM_Guidelines_Electricity_Distributor.pdf)

## Lost Revenue Adjustment Mechanism Variance Account Outline

With specific reference to the following:

### 13.2 LRAM Mechanism for 2011- 2014

The Board will adopt an approach for LRAM for the 2011-2014 CDM period that is similar to that adopted in relation to natural gas distributor DSM activities. The Board will authorize the establishment of an LRAM variance account ("LRAMVA") to capture, at the customer rate-class level, the difference between the following:

- i. The results of actual, verified impacts of authorized CDM activities undertaken by electricity distributors between 2011-2014 for both Board-Approved CDM programs and IESO-Contracted Province-Wide CDM programs in relation to activities undertaken by the distributor and/or delivered for the distributor by a third party under contract (in the distributor's franchise area); and
- ii. The level of CDM program activities included in the distributor's load forecast (i.e. the level embedded into rates).

Distributors will generally be expected to include a CDM component in their load forecast in cost of service proceedings to ensure that its customers are realizing the true effects of conservation at the earliest date possible date and to mitigate the variance between forecasted revenue losses and actual revenue losses. If the distributor has included a CDM load reduction in its distribution rates, the amount of the forecast that was adjusted for CDM at the rate class level would be compared to the actual DCM results verified by an independent third party for each year of the CDM program (i.e., 2011 to 2014) in accordance with the IESO's EM&V Protocols as set out in Section 6.1 of the CDM Code. The variance calculated from this comparison result in a credit or a debit to the ratepayers at the customer rate class level in the LRAMVA. The LRAM amount is determined by applying, by customer class, the distributor's Board-approved variable distribution charge applicable to the class to the volumetric variance (positive or negative) described in the paragraph above. The calculated lost revenues will be recorded in the LRAMVA. Distributors will be expected to report the balance in the LRAMVA as part of the reporting and record-keeping requirements on an annual basis.

This summary is extracted from the "Guidelines for Electricity Distributor Conservation and Demand Management" (EB-2012-0003). This document can be found at:  
[http://www.ontarioenergyboard.ca/oeb/ Documents/EB-2012-0003/CDM\\_Guidelines\\_Electricity\\_Distributor.pdf](http://www.ontarioenergyboard.ca/oeb/ Documents/EB-2012-0003/CDM_Guidelines_Electricity_Distributor.pdf)

## Summary Of Lost Revenue Adjustments

### LRAMVA Summary

Burman Energy Consultants Group Inc. (Burman Energy) has prepared the following LRAMVA tables, representing the variance amount to be recorded in the LRAM Variance Account. The amount is the calculated result of the lost revenues by customer class based on the volumetric impact of the load reductions arising from the CDM measures implemented, multiplied by Rideau St. Lawrence Distribution's Board-approved variable distribution changes applicable to the customer rate class in which the volumetric variance occurred. The calculations provided by Burman Energy do not include carrying charges or adjustments based on CDM reductions as included in any CDM Load reduction forecast.

Results Year	Lost Revenue Adjustment Mechanism Year					
	2012	2013	2014			
<b>2014</b>	\$ -	\$ -	\$ 7,791			
<b>2013</b>	\$ -	\$ 2,896	\$ 2,917			
<b>2012</b>	\$ 6,159	\$ 6,979	\$ 7,048			
<b>2011</b>	\$ 7,044	\$ 7,825	\$ 7,105			
<b>Total</b>	\$ 13,203	\$ 17,700	\$ 24,861			
<b>Forecast</b>	\$ 9,735	\$ 10,894	\$ 11,010			
<b>Net</b>	\$ 3,468	\$ 6,806	\$ 13,850			
<b>Variance</b>				\$ 24,124		

Results Year	Lost Revenue Adjustment Mechanism Summary By Rate Class					
	Residential	GS <= 50 kW	GS > 50 kW			Total
<b>2014</b>	\$ 10,680	\$ 10,095	\$ 4,086			\$ 24,861
<b>2013</b>	\$ 6,288	\$ 8,229	\$ 3,183			\$ 17,700
<b>2012</b>	\$ 3,706	\$ 7,164	\$ 2,333			\$ 13,203
<b>Total</b>	\$ 20,673	\$ 25,488	\$ 9,602			\$ 55,763
<b>Forecast</b>	\$ 22,147	\$ 6,095	\$ 3,397			\$ 31,639
<b>Net</b>	\$ (1,474)	\$ 19,393	\$ 6,204			\$ 24,124





## Reference Material

The following IESO documents were used to prepare the LRAMVA calculations:

- i. [2006-2014]\_RATES\_DATABASE\_FROM\_TARIFFS.xls
- ii. 2011-2014 Rideau St. Lawrence Distribution Results with Persistence.xls
- iii. Rideau St. Lawrence Distribution [2012-2014] Retrofit Project Lists

## Methodology

Burman Energy would like to present a summary of the methodology used to calculate the LRAMVA figures in this report for the purposes of auditing.

Burman Energy collects the following information as the sources for the values calculated in this report:

- Rate Database documents from the Ontario Energy Board (OEB) website for all years that are being calculated.
- Final CDM results and their persistence into future years received directly from the IESO or from the Local Distributor.
- Retrofit & High Performance New Construction (HPNC) project data with kW, kWh and Rate Class information for each project.
- The forecasted CDM results from the distributors most recently approved Cost of Service application (COS).

Burman Energy takes the results of each initiative where the savings for the LRAMVA report period are not equal to zero and enters the figures into the report. The values entered into the report are organized by results year, rate class, and then initiative. The rate classes outlined here are examples and may not be actual customer classes for this local distribution company.

<b>Results from 2014</b>
<b>Residential</b>
HVAC Incentives
<b>RESIDENTIAL TOTAL</b>
<b>GS Less Than 50 kW</b>
Retrofit
<b>GS LESS THAN 50 KW TOTAL</b>
<b>GS Greater Than 50 kW</b>
Retrofit
<b>GS GREATER THAN 50 KW TOTAL</b>
<b>Large Use</b>
Retrofit
<b>LARGE USE TOTAL</b>
<b>RESULTS FROM 2014 TOTAL</b>

The results for Retrofit and HPNC items are initially collected for all rate classes then using verified project savings the result savings are divided into the appropriate rate classes.

Year	Application Type	LDC	Demand Savings	Energy Savings	Rate Class	Sector
2014	Retrofit	Lawrence Distr	67.07	708,705	GS>50	Industrial
2014	Retrofit	Lawrence Distr	2.61	21,171	GS<50	Business

kW	GS>50	96.25%	GS<50	3.75%	Large Use	0.00%
kWh		97.10%		2.90%		0.00%

Volumetric distribution rates are derived by using the rate database provided on the OEB website directly as they appear. These volumetric distribution rates are collected for each rate class for the years during the LRAMVA reporting period and one year prior are entered into the report along with their effective date. Burman Energy uses the effective date to create a weighted volumetric rate for each of the calendar years (Jan1st through Dec 31st) years in the reporting period. A summary of the calculation is presented below:

$$\text{Weighted Rate} = \left( \text{Rate}_{old} * \left( \frac{\text{Months at Old}}{12} \right) \right) + \left( \text{Rate}_{new} * \left( \frac{\text{Months at New}}{12} \right) \right)$$

The weighted volumetric rate is multiplied by the savings metric selected by rate class (the Residential and GS<50 metric is kWh and the GS>50 and Large Use metric is kW). The resulting figure is then subject to global modifiers based on initiative (eg. Demand Response 3 is taken at a factor of 0% due to the type of savings it provides).

$$\text{LRAM}(kW) = \text{Weighted Rate} * \text{Modifier}\%_{\text{If Applicable}} * ((kW_{\text{Per Month}} * \text{Months at old Rate}) + (kW_{\text{Per Month}} * \text{Months at New Rate}))$$

$$\text{LRAM}(kWh) = \text{Weighted Rate} * \text{Modifier}\%_{\text{If Applicable}} * kWh_{\text{Annual}}$$

The totals are outlined at the bottom of each section with a summary by rate class presented near the bottom of the table for comparison to the forecasted figures.

If the distributor had forecasted CDM savings Burman Energy takes the values and applies same methods outlined for the savings results to calculate the total lost revenue that has already been recovered for the reporting period.

The recovered lost revenue is subtracted from the calculated LRAM resulting in the net figures or Variance. These figures are outlined by reporting period year and as an overall.

## Supporting Attachments

Rideau St. Lawrence Distribution Inc. LRAMVA CALCULATIONS  
 OPA Conservation & Demand Management Programs  
 Initiative Results at End-User Level

Initiative Name	2011	2012			2013			2014					
	Volumetric Rate	Net Summer Peak Demand Savings (kW)	Net Energy Savings (kWh)	Distribution Volumetric Rate (Effective Date: Jul 1)	2012 LRAMVA	Net Summer Peak Demand Savings (kW)	Net Energy Savings (kWh)	Distribution Volumetric Rate (Effective Date: May 1)	2013 LRAMVA	Net Summer Peak Demand Savings (kW)	Net Energy Savings (kWh)	Distribution Volumetric Rate (Effective Date: May 1)	2014 LRAMVA
<b>LRAM CDM Results and Persistence</b>													
<b>Results from 2014</b>													
<b>Residential</b>													
Appliance Exchange	0.0117		0.0145			0.0146				0.41	738.88	0.0148	\$ 10.89
Appliance Retirement	0.0117		0.0145			0.0146				6.44	37,342.04	0.0148	\$ 550.17
Bi-Annual Retailer Event	0.0117		0.0145			0.0146				9.01	137,666.87	0.0148	\$ 2,028.29
Conservation Instant Coupon Booklet	0.0117		0.0145			0.0146				2.36	31,539.50	0.0148	\$ 464.68
Home Assistance Program	0.0117		0.0145			0.0146				2.86	32,836.04	0.0148	\$ 483.78
HVAC Incentives	0.0117		0.0145			0.0146				28.82	55,115.78	0.0148	\$ 812.04
Residential Demand Response	0.0117		0.0145			0.0146				16.95	0.00	0.0148	\$ -
<b>RESIDENTIAL TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>66.86</b>	<b>295,239</b>		<b>\$ 4,349.86</b>
<b>GS Less Than 50 kW</b>													
Commercial Demand Response	0.0074		0.009			0.009				1.67	0.00	0.0091	\$ -
Direct Install Lighting	0.0074		0.009			0.009				73.80	269,177.16	0.0091	\$ 2,440.54
Retrofit	0.0074		0.009			0.009				1.46	15,020.18	0.0091	\$ 136.18
Time-of-Use Savings	0.0074		0.009			0.009				50.26	0.00	0.0091	\$ -
<b>GS LESS THAN 50 KW TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>127.20</b>	<b>284,197</b>		<b>\$ 2,576.72</b>
<b>GS Greater Than 50 kW</b>													
Demand Response 3	1.2473		1.8902			1.8993				64.17	0.00	1.9287	\$ -
Retrofit	1.2473		1.8902			1.8993				37.54	502,799.91	1.9287	\$ 864.53
<b>GS GREATER THAN 50 KW TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>101.71</b>	<b>502,800</b>		<b>\$ 864.53</b>
<b>RESULTS FROM 2014 TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>295.78</b>	<b>1,082,236</b>		<b>\$ 7,791.11</b>
<b>Results from 2013</b>													
<b>Residential</b>													
Annual Coupons	0.0117		0.0145			0.0146	\$ 125.76			0.58	8,633.47	0.0148	\$ 127.20
Appliance Exchange	0.0117		0.0145			0.0146	\$ 5.38			0.21	369.44	0.0148	\$ 5.44
Appliance Retirement	0.0117		0.0145			0.0146	\$ 430.03			4.59	29,521.40	0.0148	\$ 434.95
Bi-Annual Retailer Events	0.0117		0.0145			0.0146	\$ 280.32			1.33	19,243.63	0.0148	\$ 283.52
Conservation Instant Coupon Booklet	0.0117		0.0145			0.0146	\$ 0.38			0.00	26.00	0.0148	\$ 0.38
Home Assistance Program	0.0117		0.0145			0.0146	\$ 602.25			3.37	40,599.35	0.0148	\$ 598.16
HVAC	0.0117		0.0145			0.0146	\$ 698.96			25.32	47,983.53	0.0148	\$ 706.96
HVAC Incentives	0.0117		0.0145			0.0146	\$ 24.04			0.92	1,650.00	0.0148	\$ 24.31
<b>RESIDENTIAL TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>36.36</b>	<b>148,772</b>		<b>\$ 2,167.11</b>	<b>36.32</b>	<b>148,027</b>		<b>\$ 2,180.93</b>
<b>GS Less Than 50 kW</b>													
Retrofit	0.0074		0.009			0.009	\$ 265.22			5.26	29,469.01	0.0091	\$ 267.19
Small Business Lighting	0.0074		0.009			0.009	\$ 100.17			3.21	11,130.38	0.0091	\$ 100.92
<b>GS LESS THAN 50 KW TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>8.47</b>	<b>40,599</b>		<b>\$ 365.39</b>	<b>8.47</b>	<b>40,599</b>		<b>\$ 368.10</b>
<b>GS Greater Than 50 kW</b>													
DR-3	1.2473		1.8902			1.8993	\$ -			0.00	0.00	1.9287	\$ -
Energy Managers	1.2473		1.8902			1.8993	\$ 4.04			0.18	13,105.59	1.9287	\$ 4.09
Retrofit	1.2473		1.8902			1.8993	\$ 359.65			15.81	99,913.68	1.9287	\$ 363.94
<b>GS GREATER THAN 50 KW TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>165.71</b>	<b>116,440</b>		<b>\$ 363.69</b>	<b>15.98</b>	<b>113,019</b>		<b>\$ 368.03</b>
<b>RESULTS FROM 2013 TOTAL</b>		<b>0.00</b>	<b>0</b>		<b>\$ -</b>	<b>210.54</b>	<b>305,811</b>		<b>\$ 2,896.19</b>	<b>60.78</b>	<b>301,645</b>		<b>\$ 2,917.06</b>
<b>Results from 2012</b>													
<b>Residential</b>													
Appliance Exchange	0.0117	3.88	6,693.19	0.0145	\$ 87.68	3.88	6,693.19	0.0146	\$ 97.50	3.88	6,693.19	0.0148	\$ 98.61
Appliance Retirement	0.0117	5.65	40,192.79	0.0145	\$ 526.53	5.65	40,192.79	0.0146	\$ 585.47	5.65	40,192.79	0.0148	\$ 592.17
Bi-Annual Retailer Event	0.0117	1.66	29,998.91	0.0145	\$ 392.99	1.66	29,998.91	0.0146	\$ 436.98	1.66	29,998.91	0.0148	\$ 441.98
Conservation Instant Coupon Booklet	0.0117	0.26	1,566.17	0.0145	\$ 20.52	0.26	1,566.17	0.0146	\$ 22.81	0.26	1,566.17	0.0148	\$ 23.07
Home Assistance Program	0.0117	1.18	11,262.37	0.0145	\$ 147.54	1.17	11,262.37	0.0146	\$ 164.06	1.17	11,262.37	0.0148	\$ 165.93
HVAC	0.0117	0.95	1,856.29	0.0145	\$ 24.32	0.95	1,856.29	0.0146	\$ 27.04	0.95	1,856.29	0.0148	\$ 27.35
HVAC Incentives	0.0117	20.64	38,766.57	0.0145	\$ 507.84	20.64	38,766.57	0.0146	\$ 564.70	20.64	38,766.57	0.0148	\$ 571.16
<b>RESIDENTIAL TOTAL</b>		<b>34.21</b>	<b>130,336</b>		<b>\$ 1,707.41</b>	<b>34.20</b>	<b>130,336</b>		<b>\$ 1,898.57</b>	<b>34.20</b>	<b>130,336</b>		<b>\$ 1,920.29</b>
<b>GS Less Than 50 kW</b>													
Direct Install Lighting	0.0074	60.44	225,554.95	0.009	\$ 1,849.55	60.44	225,554.95	0.009	\$ 2,029.99	60.44	225,554.95	0.0091	\$ 2,045.03
High Performance New Construction	0.0074	19.23	98,245.91	0.009	\$ 805.62	19.23	98,245.91	0.009	\$ 884.21	19.23	98,245.91	0.0091	\$ 890.76
Small Business Lighting	0.0074	1.43	5,639.50	0.009	\$ 46.24	1.43	5,639.50	0.009	\$ 50.76	1.43	5,639.50	0.0091	\$ 51.13
<b>GS LESS THAN 50 KW TOTAL</b>		<b>81.10</b>	<b>329,440</b>		<b>\$ 2,701.41</b>	<b>81.10</b>	<b>329,440</b>		<b>\$ 2,964.96</b>	<b>81.10</b>	<b>329,440</b>		<b>\$ 2,986.93</b>
<b>GS Greater Than 50 kW</b>													
Demand Response 3	1.2473	152.78	3,681.86	1.8902	\$ -	0.00	0.00	1.8993	\$ -	0.00	0.00	1.9287	\$ -
Retrofit	1.2473	92.95	269,134.33	1.8902	\$ 1,749.77	92.95	269,134.33	1.8993	\$ 2,115.08	92.95	269,134.33	1.9287	\$ 2,140.32
<b>GS GREATER THAN 50 KW TOTAL</b>		<b>245.73</b>	<b>272,816</b>		<b>\$ 1,749.77</b>	<b>92.95</b>	<b>269,134</b>		<b>\$ 2,115.08</b>	<b>92.95</b>	<b>269,134</b>		<b>\$ 2,140.32</b>
<b>RESULTS FROM 2012 TOTAL</b>		<b>361.04</b>	<b>732,593</b>		<b>\$ 6,158.58</b>	<b>208.25</b>	<b>728,911</b>		<b>\$ 6,978.60</b>	<b>208.25</b>	<b>728,911</b>		<b>\$ 7,047.53</b>
<b>Results from 2011</b>													
<b>Residential</b>													
Appliance Exchange	0.0117	1.24	1,139.06	0.0145	\$ 14.92	1.24	1,139.06	0.0146	\$ 16.59	0.04	63.78	0.0148	\$ 0.94
Appliance Retirement	0.0117	6.12	43,725.78	0.0145	\$ 572.81	6.12	43,725.78	0.0146	\$ 636.94	5.89	43,523.80	0.0148	\$ 641.25
Bi-Annual Retailer Event	0.0117	2.00	35,363.41	0.0145	\$ 463.26	2.00	35,363.41	0.0146	\$ 515.13	2.00	35,363.41	0.0148	\$ 512.02
Conservation Instant Coupon Booklet	0.0117	1.31	21,187.08	0.0145	\$ 277.55	1.31	21,187.08	0.0146	\$ 308.63	1.31	21,187.08	0.0148	\$ 312.16
HVAC	0.0117	25.60	51,132.66	0.0145	\$ 669.84	25.60	51,132.66	0.0146	\$ 744.83	25.60	51,132.66	0.0148	\$ 753.35
<b>RESIDENTIAL TOTAL</b>		<b>36.27</b>	<b>152,548</b>		<b>\$ 1,998.38</b>	<b>36.27</b>	<b>152,548</b>		<b>\$ 2,222.12</b>	<b>34.84</b>	<b>151,271</b>		<b>\$ 2,228.72</b>
<b>GS Less Than 50 kW</b>													
Direct Install Lighting	0.0074	108.75	272,306.31	0.009	\$ 2,232.91	108.75	272,306.31	0.009	\$ 2,450.76	77.94	187,229.74	0.0091	\$ 1,697.55
Electricity Retrofit Incentive Program	0.0074	1.35	7,842.98	0.009	\$ 64.31	1.35	7,842.98	0.009	\$ 70.59	1.35	7,842.98	0.0091	\$ 71.11
High Performance New Construction	0.0074	46.35	93,785.00	0.009	\$ 769.04	46.35	93,785.00	0.009	\$ 844.07	46.35	93,785.00	0.0091	\$ 850.32
Retrofit	0.0074	30.96	170,338.15	0.009	\$ 1,396.77	30.96	170,338.15	0.009	\$ 1,533.04	30.96	170,338.15	0.0091	\$ 1,544.40
<b>GS LESS THAN 50 KW TOTAL</b>		<b>187.40</b>	<b>544,272</b>		<b>\$ 4,463.03</b>	<b>187.40</b>	<b>544,272</b>		<b>\$ 4,898.45</b>	<b>156.60</b>	<b>459,196</b>		<b>\$ 4,163.38</b>
<b>GS Greater Than 50 kW</b>													
Retrofit	1.2473	30.96	170,338.15	1.8902	\$ 582.79	30.96	170,338.15	1.8993	\$ 704.46	30.96	170,338.15	1.9287	\$ 712.87
<b>GS GREATER THAN 50 KW TOTAL</b>		<b>30.96</b>	<b>170,338</b>		<b>\$ 582.79</b>	<b>30.96</b>	<b>170,338</b>		<b>\$ 704.46</b>	<b>30.96</b>	<b>170,338</b>		<b>\$ 712.87</b>
<b>RESULTS FROM 2011 TOTAL</b>		<b>254.63</b>	<b>867,159</b>		<b>\$ 7,044.20</b>	<b>254.63</b>	<b>867,159</b>		<b>\$ 7,825.03</b>	<b>222.39</b>	<b>780,805</b>		<b>\$ 7,104.96</b>
<b>Summary By Rate Class</b>													
Residential	0.0117	70.48	282,884.29	0.0145	\$ 3,705.78	106.83	431,655.84	0.0146	\$ 6,287.79	172.22	724,872.95	0.0148	\$ 10,679.79
General Service Less Than 50 kW	0.0074	268.51	873,712.81	0.009	\$ 7,164.45	276.98	914,312.20	0.009	\$ 8,228.81	373.37	1,113,432.97	0.0091	\$ 10,095.13
General Service Greater Than 50 kW	1.2473	276.68	443,154.34	1.8902	\$ 2,332.55	289.62	555,912.81	1.8993	\$ 3,183.22	241.60	1,055,291.67	1.9287	\$ 4,085.75
<b>SUMMARY BY RATE CLASS TOTAL</b>		<b>615.67</b>	<b>1,599,751</b>		<b>\$ 13,202.78</b>	<b>673.42</b>	<b>1,901,881</b>		<b>\$ 17,699.82</b>	<b>787.20</b>	<b>2,893,598</b>		<b>\$ 24,860.67</b>
<b>LRAM CDM RESULTS AND PERSISTENCE TOTAL</b>		<b>615.67</b>	<b>1,599,751.44</b>		<b>\$ 13,202.78</b>	<b>673.42</b>	<b>1,901,880.86</b>		<b>\$ 17,699.82</b>	<b>787.20</b>	<b>2,893,597.58</b>		<b>\$ 24,860.67</b>
<b>Load Forecast CDM Component</b>													
Residential	0.0117	0.00	522,335.00	0.0145	\$ 6,842.59	0.00	522,335.00	0.0146	\$ 7,608.68	0.00			

## METHODOLOGY

All results are at the end-user level (not including transmission and distribution losses)

### EQUATIONS:

#### PRESCRIPTIVE MEASURES/PROJECTS:

**Gross Savings** = Activity \* Per Unit Assumption

**Net Savings** = Gross Savings \* Net-to-Gross Ratio

All savings are annualized (i.e. the savings are the same regardless of time of year a project was completed or measure installed)

#### ENGINEERED/CUSTOM PROJECTS:

**Gross Savings** = Reported Savings \* Realization Rate

**Net Savings** = Gross Savings \* Net-to-Gross Ratio

All savings are annualized (i.e. the savings are the same regardless of time of year a project was completed or measure installed)

#### DEMAND RESPONSE:

**Peak Demand: Gross Savings = Net Savings** = contracted MW at contributor level \* Provincial contracted to ex ante ratio

**Energy: Gross Savings = Net Savings** = provincial ex post energy savings \* LDC proportion of total provincial contracted MW

All savings are annualized (i.e. the savings are the same regardless of the time of year a participant began offering DR)

#	Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
<b>Consumer Program</b>				
1	Appliance Retirement	Includes both retail and home pickup stream; Retail stream allocated based on average of residential throughput; Home pickup stream directly attributed by postal code or customer selection	Savings are considered to begin in the year the appliance is picked up.	<b>Peak demand and energy savings</b> are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
2	Appliance Exchange	When postal code information is provided by customer, results are directly attributed to the LDC. When postal code is not available, results allocated based on average of residential throughput	Savings are considered to begin in the year that the exchange event occurred	
3	HVAC Incentives	Results directly attributed to LDC based on customer postal code	Savings are considered to begin in the year that the installation occurred	
4	Conservation Instant Coupon Booklet	LDC-coded coupons directly attributed to LDC; Otherwise results are allocated based on average of residential throughput	Savings are considered to begin in the year in which the coupon was redeemed.	<b>Peak demand and energy savings</b> are determined using the verified measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level. Reported results are presented with verified per unit assumptions and net-to-gross ratio from Bi-Annual Retailer Event and Conservation Instant Coupon Booklet initiatives.
5	Bi-Annual Retailer Event	Results are allocated based on average of residential throughput	Savings are considered to begin in the year in which the event occurs.	
6	Retailer Co-op	When postal code information is provided by the customer, results are directly attributed. If postal code information is not available, results are allocated based on average of residential throughput.	Savings are considered to begin in the year of the home visit and installation date.	
7	Residential Demand Response	Results are directly attributed to LDC based on data provided to OPA through project completion reports and continuing participant lists	Savings are considered to begin in the year the device was installed and/or when a customer signed a <b>peaksaver PLUS™</b> participant agreement.	<b>Peak demand savings</b> are based on an ex ante estimate assuming a 1 in 10 weather year and represents the "insurance value" of the initiative. <b>Energy savings</b> are based on an ex post estimate which reflects the savings that occurred as a result of activations in the year and accounts for any "snapback" in energy consumption experienced after the event. Savings are assumed to <b>persist</b> for only 1 year, reflecting that savings will only occur if the resource is activated.

#	Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
8	Residential New Construction	Results are directly attributed to LDC based on LDC identified in application in the saveONenergy CRM system; Reported results are presented with forecast assumptions as per the business case.	Savings are considered to begin in the year of the project completion date.	<b>Peak demand and energy savings</b> are determined using a measure level per unit assumption multiplied by the uptake in the market (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
<b>Business Program</b>				
9	Efficiency: Equipment Replacement	Results are directly attributed to LDC based on LDC identified at the facility level in the saveONenergy CRM; Projects in the Application Status: "Post-Stage Submission" are included (excluding "Payment denied by LDC"); Please see "Reference Tables" tab for Building type to Sector mapping	Savings are considered to begin in the year of the actual project completion date on the iCON CRM system.	<b>Peak demand and energy savings</b> are determined by the total savings for a given project as reported in the iCON CRM system (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). Both realization rate and net-to-gross ratios can differ for energy and demand savings and depend on the mix of projects within an LDC territory (i.e. lighting or non-lighting project, engineered/custom/prescriptive track).
10	Direct Installed Lighting	Results are directly attributed to LDC based on the LDC specified on the work order	Savings are considered to begin in the year of the actual project completion date.	<b>Peak demand and energy savings</b> are determined using the verified measure level per unit assumptions multiplied by the uptake of each measure accounting for the realization rate for both peak demand and energy to reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings take into account net-to-gross factors such as free-ridership and spillover for both peak demand and energy savings at the program level (net).
11	Existing Building Commissioning Incentive	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year of the actual project completion date.	<b>Peak demand and energy savings</b> are determined by the total savings for a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross).
12	New Construction and Major Renovation Incentive	Results are directly attributed to LDC based on LDC identified in the application; Initiative was not evaluated, reported results are presented with reported assumptions.	Savings are considered to begin in the year of the actual project completion date.	Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).
13	Energy Audit	Projects are directly attributed to LDC based on LDC identified in the application	Savings are considered to begin in the year of the audit date.	<b>Peak demand and energy savings</b> are determined by the total savings resulting from an audit as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).

#	Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
14	Commercial Demand Response (part of the Residential program schedule)	Results are directly attributed to LDC based on data provided to OPA through project completion reports and continuing participant lists	Savings are considered to begin in the year the device was installed and/or when a customer signed a <b>peaksaver PLUS™</b> participant agreement.	<b>Peak demand savings</b> are based on an ex ante estimate assuming a 1 in 10 weather year and represents the "insurance value" of the initiative. <b>Energy savings</b> are based on an ex post estimate which reflects the savings that occurred as a result of activations in the year. Savings are assumed to <b>persist</b> for only 1 year, reflecting that savings will only occur if the resource is activated.
15	Demand Response 3 (part of the Industrial program schedule)	Results are attributed to LDCs based on the total contracted megawatts at the contributor level as of December 31st of the relevant year, applying the provincial ex ante to contracted ratio (ex ante estimate/contracted megawatts); Ex post energy savings are attributed to the LDC based on their proportion of the total contracted megawatts at the contributor level.	Savings are considered to begin in the year in which the contributor signed up to participate in demand response.	<b>Peak demand savings</b> are ex ante estimates based on the load reduction capability that can be expected for the purposes of planning. The ex ante estimates factor in both scheduled non-performances (i.e. maintenance) and historical performance. <b>Energy savings</b> are based on an ex post estimate which reflects the savings that actually occurred as a results of activations in the year. Savings are assumed to persist for 1 year, reflecting that savings will not occur if the resource is not activated and additional costs are incurred to activate the resource.
<b>Industrial Program</b>				
16	Process & System Upgrades	Results are directly attributed to LDC based on LDC identified in application in the saveONenergy CRM system.	Savings are considered to begin in the year in which the incentive project was completed.	<b>Peak demand and energy savings</b> are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).
17	Monitoring & Targeting	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which the incentive project was completed.	<b>Peak demand and energy savings</b> are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).
18	Energy Manager	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which the project was completed by the energy manager. If no date is specified the savings will begin the year of the Quarterly Report submitted by the energy manager.	<b>Peak demand and energy savings</b> are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net).

#	Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
19	Efficiency: Equipment Replacement Incentive (part of the C&I program schedule)	Results are directly attributed to LDC based on LDC identified at the facility level in the saveONenergy CRM; Projects in the Application Status: "Post-Stage Submission" are included (excluding "Payment denied by LDC"); Please see "Reference Tables" tab for Building type to Sector mapping	Savings are considered to begin in the year of the actual project completion date on the iCON CRM system.	<b>Peak demand and energy savings</b> are determined by the total savings for a given project as reported in the iCON CRM system (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). Both realization rate and net-to-gross ratios can differ for energy and demand savings and depend on the mix of projects within an LDC territory (i.e. lighting or non-lighting project, engineered/custom/prescriptive track).
20	Demand Response 3	Results are attributed to LDCs based on the total contracted megawatts at the contributor level as of December 31st of the relevant year, applying the provincial ex ante to contracted ratio (ex ante estimate/contracted megawatts); Ex post energy savings are attributed to the LDC based on their proportion of the total contracted megawatts at the contributor level.	Savings are considered to begin in the year in which the contributor signed up to participate in demand response.	<b>Peak demand savings</b> are ex ante estimates based on the load reduction capability that can be expected for the purposes of planning. The ex ante estimates factor in both scheduled non-performances (i.e. maintenance) and historical performance. <b>Energy savings</b> are based on an ex post estimate which reflects the savings that actually occurred as a result of activations in the year. Savings are assumed to persist for 1 year, reflecting that savings will not occur if the resource is not activated and additional costs are incurred to activate the resource.
<b>Home Assistance Program</b>				
21	Home Assistance Program	Results are directly attributed to LDC based on LDC identified in the application; reported results are presented with forecast assumptions as per the business case.	Savings are considered to begin in the year in which the measures were installed.	<b>Peak demand and energy savings</b> are determined using the measure level per unit assumption multiplied by the uptake of each measure (gross) taking into account net-to-gross factors such as free-ridership and spillover (net) at the measure level.
<b>Legacy Programs Completed in Current Year</b>				
22	Electricity Retrofit Incentive Program	Results are directly attributed to LDC based on LDC identified in the application.	Savings are considered to begin in the year in which a project was completed.	<b>Peak demand and energy savings</b> are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). <b>If energy savings are not available</b> , an estimate is made based on the kWh to kW ratio in the provincial results ( <a href="http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports">http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports</a> ).
23	High Performance New Construction	Results are directly attributed to LDC based on customer data provided to the OPA from the gas utility.	Savings are considered to begin in the year in which a project was completed.	
24	Toronto Comprehensive	Program run exclusively in Toronto Hydro-Electric System Limited service territory		



#	Initiative	Attributing Savings to LDCs	Savings 'start' Date	Calculating Resource Savings
25	Multifamily Energy Efficiency Rebates	Results are directly attributed to LDC based on LDC identified in the application	Savings are considered to begin in the year in which a project was completed.	<p><b>Peak demand and energy savings</b> are determined by the total savings from a given project as reported (reported). A realization rate is applied to the reported savings to ensure that these savings align with EM&amp;V protocols and reflect the savings that were actually realized (i.e. how many light bulbs were actually installed vs. what was reported) (gross). Net savings takes into account net-to-gross factors such as free-ridership and spillover (net). <b>If energy savings are not available</b>, an estimate is made based on the kWh to kW ratio in the provincial results (<a href="http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports">http://www.powerauthority.on.ca/evaluation-measurement-and-verification/evaluation-reports</a>).</p>
26	Data Centre Incentive Program	Program run exclusively in PowerStream Inc. service territory		
27	EnWin Green Suites	Program run exclusively in ENWIN Utilities Ltd. service territory		