

Ontario Energy Board

Commission de l'énergie de l'Ontario



Conservation and Demand Management Report
2011-2014 Results
EB-2010-0215

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Executive Summary

The 2011 to 2014 conservation and demand management (CDM) term ended on December 31, 2014. The CDM Term was guided by the [March 31, 2010 CDM Directive](#) (the Directive) from the Minister of Energy, the Ontario Energy Board's (OEB) [CDM Code](#) and the OEB's Decision and Order related to [CDM Targets](#). The Directive set out a provincial cumulative energy reduction target of 6,000 GWh and peak demand reduction target of 1,330 MW to be met by electricity distributors by the end of 2014.

The Directive requires the OEB to publish annually verified results for each distributor and consolidated results for all distribution CDM programs. This is the final CDM Summary Report to be issued by the OEB for the 2011 to 2014 CDM term. This summary report looks at the overall achievements by distributors in their efforts to meet the CDM Targets as well as discusses results specifically in 2014.

The CDM Code set out the rules that distributors were to follow in meeting these targets, while the Decision and Order on CDM Targets applied the requirements of the Minister's CDM Directive and apportioned the provincial CDM targets to all electricity distributors, amending each distributor's licence to include the CDM Targets. Results were to be achieved through a combination of province-wide CDM programs made available by the Ontario Power Authority (OPA)¹ and OEB-Approved programs.

Final results² from the 2011-2014 programs indicate that distributors have exceeded the provincial energy targets by achieving a total of 6,553 GWh of cumulative energy savings, or 109% of the overall energy (kWh) savings target. A reduction of 928 MW in peak demand was also achieved³, or 70% of the peak demand (kW) savings target. By the end of 2014, and at the conclusion of the 2011 to 2014 CDM term, 62 distributors exceeded 80% of their energy (kWh) target, of which 43 distributors met or exceeded their total 2011-2014 energy (kWh) target. In addition, six distributors have achieved at least 100% of their peak demand (kW) target, while eight others have achieved at least 80%.

¹ On January 1, 2015, the OPA merged with the Independent Electricity System Operator (IESO). The merged entity is called the IESO.

² The results discussed here match the total aggregate province-wide results that were evaluated by the IESO, including results from the IESO-Province Wide CDM Programs as well as results from Time-Of-Use Rates. They do not include results related to PowerStream Inc.'s OEB-Approved CDM Program or any adjustments to 2011-2014 Final Results identified by the IESO. The OEB discusses these additional results later in this report.

³ Peak demand savings results under the IESO's Scenario 1 which assumes demand response resources have a persistence of 1 year.

On a program basis throughout the 2011 to 2014 CDM term, the majority of energy savings (kWh) came from the Business Program (3,359 GWh or 51%) followed by the Consumer Program (1,113 GWh or 19%). Similarly, the share of overall peak demand (kW) savings largely came from the Business Program (333 MW or 25%) followed by the Consumer Program (240 MW or 18%).

These savings results are consistent with the final division of spending across the major programs. The majority of spending was on the Business Program (\$512M or 54%) followed by the Consumer Program (\$307M or 32%). Over the 2011-2014 CDM term, a total of \$953.7M has been spent on CDM programs. When factoring in Central Program Services costs incurred by the OPA, the total amount spent on CDM programs from 2011 to 2014 is 1.05B.⁴

In 2014, the final year of the CDM framework, results from electricity distributors' continued delivery of CDM programs saw the Business Program (600 GWh) yield significant energy savings compared with the other major program types followed by the Consumer Program (213 GWh). Net incremental peak demand (kW) savings were balanced across the major program types as the Industrial Program (181 MW), Consumer Program (154 MW), and Business Program (133 MW) all produced comparable savings.

In accordance with the OEB's CDM Code, distributors that have achieved at least 80% of both their energy savings (kWh) target and peak demand (kW) target can apply to the OEB for a performance incentive. A total of 12 distributors achieved over 80% of both targets and are therefore eligible to apply to the OEB for a performance incentive.

Distributors who have not achieved at least 80% of their energy savings (kWh) target, and therefore have not met the condition of their licence, will be subject to further review by the OEB.⁵ A total of 13 distributors failed to achieve at least 80% of their energy savings (kWh) target. The OEB is currently reviewing the details provided by each of these distributors in their 2014 annual reports in relation to the level of energy savings (kWh) each distributor achieved.

⁴ Central Program Services costs include program delivery services such as Evaluation, Measurement, and Verification (EM&V), marketing and awareness campaigns, IT support, call centre, technical review services and settlement services.

⁵ In a letter issued on December 17, 2014, the OEB indicated that it will take no compliance action against distributors who do not achieve 80% of their peak demand target but have achieved at least 80% of their energy savings target.

There were no new OEB-Approved programs in 2014. PowerStream Inc.'s Direct Install Refrigeration program was approved by the OEB in 2013. The other OEB-Approved program is the implementation of Time-of-Use (TOU) pricing. The results provided by the IESO show that TOU pricing resulted in a province-wide summer peak demand reduction of 55 MW in the residential sector representing 0.73% of the total residential load. These peak demand (kW) savings were attributed to distributors and contribute towards the achievement of peak demand targets.

The OEB notes that a new framework for 2015 to 2020 has been developed. Ensuring the delivery of CDM programs remains a condition of licences, but the OEB has not established numeric targets. With this new framework distributors will assume greater leadership in the development of new programs.

1. Background

1.1 Green Energy and Green Economy Act, 2009

On September 9, 2009, certain sections of the *Green Energy and Green Economy Act, 2009* (the Green Energy Act) were proclaimed. The *Green Energy Act* amended section 27.2 of the *Ontario Energy Board Act, 1998* (the Act) and stated that a directive may require the OEB to specify, as a condition of licence, conservation and demand management targets (CDM Targets) for distributors.

1.2 CDM Directive to the OEB

The Minister of Energy and Infrastructure issued a directive, dated March 31, 2010, to the OEB under sections 27.1 and 27.2 of the Act.

The Directive required the OEB to take steps to establish electricity CDM Targets to be met by certain licensed distributors.

The Directive also required the OEB to add a condition to the licence of each distributor that distributors must achieve reductions in electricity consumption (6,000 GWh) and in peak provincial electricity demand (1,330 MW) by the amounts that the OEB specified in each distributor's licence. The reductions were to be achieved through the delivery of CDM programs over the four-year period which began on January 1, 2011 and ended on December 31, 2014.

Further, the Directive required the OEB to issue a code that set out the obligations and requirements with which licensed distributors must comply in relation to the CDM Targets.

Finally, the Directive requires the OEB to publish annually verified results for each distributor and consolidated results for all distribution CDM programs. To date, the OEB has issued three CDM Summary Reports which discussed 2011, 2012, and 2013 results, respectively. This is the final CDM Summary Report to be issued by the OEB for the 2011 to 2014 CDM term. This report summarizes CDM results for 2014 as well as the overall results towards the CDM Targets.

1.3 CDM Directives to the OPA

On April 23, 2010, the Minister of Energy directed the OPA⁶ to support distributors and the OEB in the development and implementation of the activities related to the 2011-2014 CDM Targets, including providing advice to the OEB on the appropriate allocation of CDM Targets amongst distributors and designing, delivering and funding OPA-Contracted Province-Wide CDM Programs.

On December 21, 2012, the Minister of Energy directed the 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 distributors to achieve their 2011-2014 energy (kWh) or peak demand (kW) savings targets.

A new CDM framework has been established for the 2015 to 2020 period. On March 31, 2014, the Minister of Energy directed the OPA to support and fund the delivery of CDM programs through distributors to achieve a total of 7 TWh of electricity savings between January 1, 2015 and December 31, 2020. The March 31, 2014 directive does not affect any of the targets established previously, which were to be met by December 31, 2014. The Minister of Energy further directed the OEB to annually review and publish the CDM results of each distributor. The OEB's next reporting for CDM will be under this new framework.

1.4 CDM Code and Annual Reporting

On September 30, 2010 the OEB issued its CDM Code (EB-2010-0215). The CDM Code set out the conditions and rules that licensed distributors were required to follow in achieving their CDM Targets.

Section 2.2 of the CDM Code sets out the requirements distributors must follow when reporting on annual CDM results. Each distributor was required to file their annual CDM report with the OEB by September 30th of each year, starting with the 2011 reports which were filed in 2012. The OEB has received CDM reports from distributors for the 2011, 2012, 2013, and 2014 program years.

⁶ As of January 1, 2015, this became the IESO.

2. 2014 CDM Annual Reports

Distributors have filed their CDM reports on the basis of a template prepared by a working group of distributors and the OPA, and reviewed by OEB staff for consistency with the CDM Code. Only very minor revisions were made to the template for the 2014 reporting year. The OEB appreciates the continuing efforts of the distributors to file their reports on a timely and consistent basis.

2.1 CDM Results

The overall 2011-2014 CDM results are summarized and included in Appendix A of this report. Charts showing the cumulative progress of each distributor against their CDM Targets can be found in Appendix B.

As outlined in the CDM Code, results towards the CDM Targets must be achieved through a combination of province-wide CDM programs made available by the OPA; and, OEB-Approved programs. There are two OEB-Approved CDM programs to be considered towards targets. PowerStream Inc.'s Direct Install Refrigeration (DIR) program was approved by the OEB in 2013. In addition, the OEB has indicated that energy or peak demand savings resulting from the implementation of TOU pricing will be counted towards targets. Both of these programs are discussed later in the report.

The tables that follow include the consolidated 2014 net energy (kWh) and peak demand (kW) savings results. Net energy (kWh) and/or peak demand (kW) savings represent the total change in energy consumption (kWh) and/or peak demand (kW) that is attributable to energy efficiency or demand response programs. The results have been adjusted to take into account free riders, spillover effect, free drivers and energy efficiency standards, amongst others.

All previous CDM Summary Reports (i.e., 2011, 2012, and 2013) and all individual distributor reports that discuss local CDM activity in 2011, 2012, 2013, and 2014 can be found on the OEB's [website](#).

2.2 OPA-Contracted Province-Wide CDM Programs

As noted above, on December 21, 2012, the Minister of Energy issued a directive to the OPA to extend funding for the Province-Wide CDM programs until December 31, 2015.

In reporting CDM results to the OEB, distributors have been directed to rely on the IESO's final evaluation results for all province-wide CDM programs as prepared by the IESO. These evaluations have resulted in final net energy (kWh) consumption and peak demand (kW) savings for the 2014 program year, which the distributors have included in the 2014 annual reports.

The consolidated results included in the tables throughout this report are consistent with those reported by the IESO⁷ for the 2014 program year and are discussed below.

3. 2014 Verified Savings

Savings totals for energy (kWh) have been reported below as both 2014-only savings (e.g., new incremental savings that took place during 2014) and as cumulative energy (kWh) savings persisting throughout the 2011 to 2014 term. Savings for peak demand have been reported as persisting peak demand (kW) savings in place at the end of 2014.

3.1 Adjustments to Final Results

On the same day distributors' 2014 annual reports were due to be filed with the OEB, the IESO issued letters to five distributors indicating that there have been minor adjustments made by the IESO to the results for each of these five distributors. The five distributors who received a letter from the IESO are: Brantford Power, Entegrus, Northern Ontario Wires, Thunder Bay Hydro, and Tilsonburg Hydro. The total adjustments for these five distributors are minor (a total adjustment of 0.119 MW for peak demand and 672 MWh for energy savings).

Where individual distributor results are reported throughout this report, the OEB has included the minor adjustments made to the results of these five distributors. The IESO will report these additional savings next year in its 2015 Annual Report to the OEB as '2014 true-up' savings.

As part of the 2014 evaluation, the IESO undertook a review of the 2011, 2012, and 2013 results to ensure that all savings were accounted for, adjusting for any omissions and/or errors identified after the release of the 2013 Final Results Report. This process was developed with the IESO's Distributor Reporting Working Group and took place each year.

⁷ Results for prior years were reported by the OPA, but for 2014 were reported by the IESO.

3.2 Energy Savings (kWh)

To achieve the energy consumption CDM Target of 6,000 GWh, distributors relied on the energy savings achieved each year, as well as the persisting savings in subsequent years, all of which accumulated over the 4-year period and contributed towards achieving the overall target.

Generally, the energy efficiency effects of a conservation program will last multiple years i.e. the savings achieved in the first year of a new measure, persist in subsequent years. Through the installation of new energy efficient technologies, overall energy consumption savings take place as the new technology uses less energy than the technology it replaced. The energy savings from upgrading to more energy efficient technologies will generally persist over a number of years. The savings in the subsequent years may be slightly reduced from the first year the new technology was installed due to a number of factors (e.g., the new technologies being uninstalled or failing to work, efficiency performance deterioration, etc.).

The cumulative and persisting effects of energy savings are important factors that distributors and the IESO have taken into consideration from the start of the 2011 to 2014 CDM term. Since distributors receive credit towards their target for every kWh of electricity they are able to conserve throughout the 2011 to 2014 CDM period, there is a great benefit in achieving a high level of savings earlier in the period due to the persisting nature of energy savings. The savings in each year include the savings from programs delivered in that year plus the savings from prior years that persist in that year. The energy savings target is cumulative so these savings for each year are all added together to come up with the overall results.

Table 1 below provides the annual energy savings from CDM programs over the period 2011 to 2014, and shows the persisting savings in subsequent years following the year the energy savings were first achieved. Overall, the annual savings and the persisting savings combine and result in the cumulative contribution towards the energy savings target. By the end of 2014, distributors successfully implemented CDM programs to produce 6,553GWh of cumulative energy savings, achieving 109.2% of the overall 2011-2014 energy savings target. Below is a summary of the final results:

- In 2011, collective results from distributors' CDM efforts contributed to achieve 606.9 GWh of energy savings towards the 2014 target. The effects of the CDM programs from 2011 continued to persist in subsequent years, as the energy efficiency measures remained in place. The continued effects of the 2011

energy efficiency improvements contributed 603 GWh, 601 GWh and 582 GWh⁸ of energy savings toward the target in 2012, 2013 and 2014 respectively. The cumulative contribution of the 2011 CDM programs to the target is 2,393.1 GWh or 40% of the overall target.

- Likewise, the 2012, 2013 and 2014 CDM programs respectively contributed a total of 1,513.3 GWh (25%), 1,232.8 GWh (21%) and 1,413.9 GWh (24%) toward the overall energy target.

Table 1 below shows the energy savings results for each year. Annual energy savings results include persistence from previous years. The table also includes adjustments made by the IESO to previous years' verified results. The cumulative contribution of the savings achieved in any particular implementation year are calculated by adding the annual results from 2011 to 2014, as well as any adjustments made each year.

Table 1 – Province-Wide Net Energy Savings at the End-User Level (GWh)⁹

Implementation Period	Annual Results (GWh)								Cumulative	
	2011	% of Target	2012	% of Target	2013	% of Target	2014	% of Target	2011-2014	% of Target
2011	606.9	10.1%	603.0	10.1%	601.0	10.0%	582.3	9.7%	2,393.1	40%
2012 ¹⁰	18.7	(n/a)	503.6	8.4%	498.4	8.3%	492.6	8.2%	1,513.3	25%
2013 ¹¹	1.7	(n/a)	44.4	(n/a)	603.3	10.1%	583.4	9.7%	1,232.8	21%
2014 ¹²	7.3	(n/a)	44.8	(n/a)	191.0	(n/a)	1,170.8	19.5%	1,413.9	24%
Verified Net Cumulative Energy Savings 2011-2014									6,553.0	109.2%
2011-2014 Cumulative CDM Energy Target									6,000	

3.2.1 2014 Net Incremental Energy Savings

The net incremental energy savings (kWh), that is, the new energy savings that were the result of specific programs/initiatives delivered in 2011, 2012, 2013 and 2014 are

⁸ Energy savings generally persist in their entirety from one year to the next until the end of the useful life of the technology or equipment. For few measures that do not persist throughout the 2011 to 2014 CDM term, the IESO has accounted for this as part of its evaluation process.

⁹ Table 1 has relied on data found in the IESO's 2014 CDM Annual Report, Table 2, September 30, 2015.

¹⁰ Includes adjustments to previous years' verified results (shown in the shaded blue cells).

¹¹ Includes adjustments to previous years' verified results (shown in the shaded blue cells).

¹² Includes adjustments to previous years' verified results (shown in the shaded blue cells).

summarized in Table 2. It can be seen that in 2014, the biggest contributor to energy savings was the Business Program (600 GWh) followed by the Consumer Program (213 GWh). The Aboriginal Programs were first delivered starting in 2013.

Table 2 – Net Incremental Energy Savings (kWh)¹³

Program/Initiative Name	2011	2012	2013	2014
Consumer Program	133,520,941	75,796,859	70,049,807	212,530,376
Business Program	198,124,253	381,415,230	430,423,659	600,176,121
Industrial Program	31,947,577	9,156,820	28,907,187	112,992,199
Home Assistance Program	39,283	5,442,232	20,987,275	19,582,658
Aboriginal Program	n/a	n/a	1,609,393	3,101,207
Pre-2011 Program Completed in 2011	243,251,550	11,901,944	3,522,240	3,168,578
Other	n/a	1,188,362	4,075,382	24,096,859
Adjustments to 2011 Results	n/a	18,689,081	1,736,381	7,319,857
Adjustments to 2012 Results	n/a	n/a	41,947,840	37,080,215
Adjustments to 2013 Results	n/a	n/a	n/a	150,785,808
Total Incremental Net Energy Savings (kWh)	606,883,604	503,746,721	603,259,164	1,170,833,878

3.2.2 2011-2014 - Cumulative Energy Savings by Program/Initiative

Table 3 provides the specific cumulative persisting energy savings throughout the 2011 to 2014 term for each of the programs/initiatives offered by distributors throughout Ontario. It can be seen that the main driver of energy savings is the Business Program at more than 50% of the total. The Consumer Program also had a significant impact at close to 20%.

Table 3 – 2011-2014 Cumulative Net Energy Savings (kWh) by Program/Initiative

Program/Initiative Name	2011-2014 Cumulative Savings (kWh)	Percentage of 2011-2014 Total Cumulative Net Energy Savings (kWh)
Consumer Program	1,112,588,565	18.5%
Business Program	3,358,699,887	56.0%
Industrial Program	297,725,188	5.0%

¹³ For consistency, net incremental energy savings (kWh) totals in Table 2 have been taken from the IESO's 2014 CDM Summary Report, September 30, 2015.

Program/Initiative Name	2011-2014 Cumulative Savings (kWh)	Percentage of 2011-2014 Total Cumulative Net Energy Savings (kWh)
Home Assistance Program	77,532,571	1.3%
Aboriginal Program	6,319,993	0.1%
Pre-2011 Program Completed in 2011	1,018,925,088	17.0%
Other	35,812,709	0.6%
Adjustments to Previous Years	645,389,397	n/a
2011-2014 Total Cumulative Net Energy Savings (kWh)	6,552,993,398	
% of Full OEB Target Achieved	109.2%	

Chart 1 below shows the cumulative energy savings (kWh) for each program type throughout the CDM term. The overall cumulative energy savings that have been achieved up to the end of 2014 is also shown. It can be seen that the Business Program is the largest contributor to the cumulative energy savings results, contributing over 60% of the overall final results.

Chart 1 – Percentage of Annual Program Savings Contributions Towards 2011-2014 Net Cumulative Energy Savings Target (kWh)

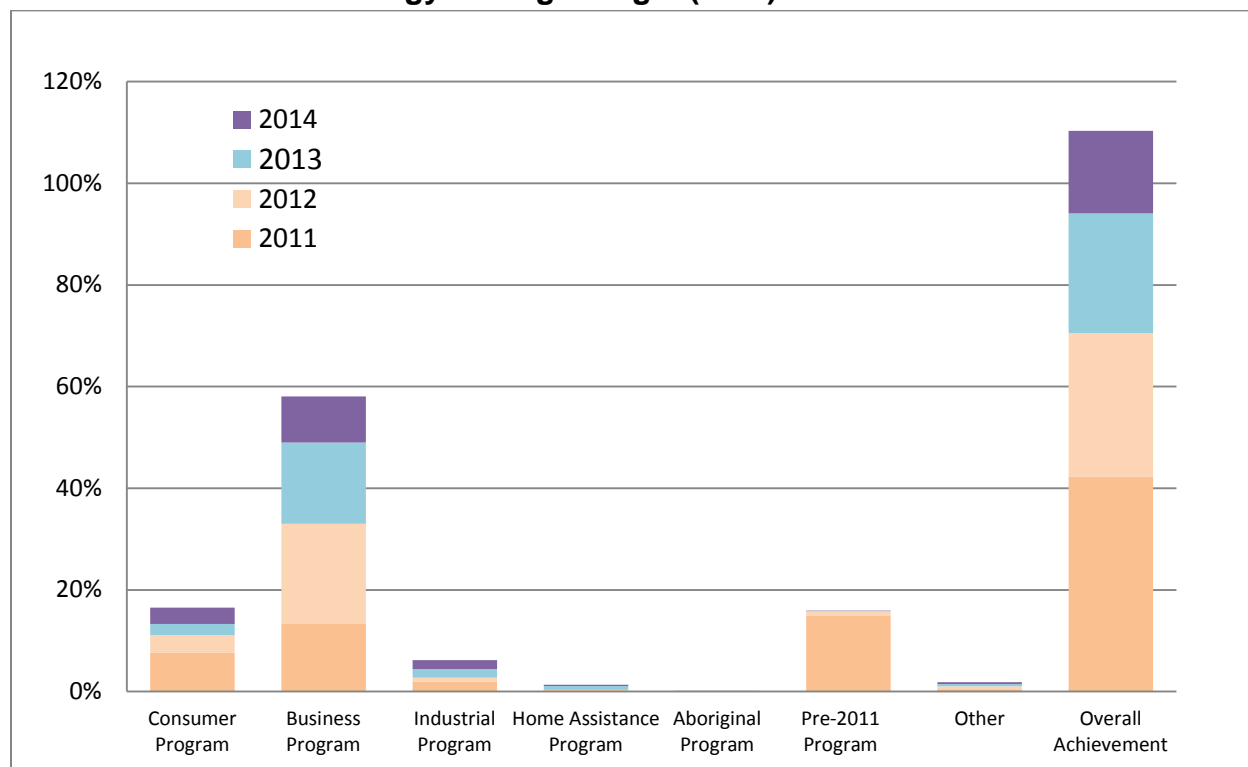


Table 4 below lists the 43 distributors who met or surpassed their total net energy (kWh) savings target. These 43 distributors provide electricity service to approximately 62% of all customers in Ontario.

Table 4 – Distributors that met at least 100% of energy target (kWh)

	Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved		Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved
1	Orillia Power	13,340	227%	23	Niagara Peninsula Energy	51,824	121%
2	Woodstock Hydro	15,745	202%	24	St. Thomas Energy	16,918	120%
3	Chapleau Public Utilities	1,235	179%	25	Fort Frances Power	3,753	118%
4	Erie Thames Powerlines	18,265	169%	26	Welland Hydro-Electric	22,470	116%
5	Brantford Power	38,789	169%	27	Haldimand County Hydro	21,323	115%
6	Guelph Hydro Electric Systems	52,963	165%	28	Kitchener-Wilmot Hydro	91,143	114%
7	Cambridge and North Dumfries Hydro	52,684	164%	29	Enersource Hydro	201,359	111%
8	Hydro 2000	1,221	160%	30	Westario Power	22,822	111%
9	Festival Hydro	20,362	156%	31	Hydro Ottawa	319,536	111%
10	Rideau St. Lawrence Distribution	5,858	142%	32	Newmarket - Tay Power Distribution	34,871	109%
11	Centre Wellington Hydro	6,729	137%	33	Entegrus	40,503	109%
12	Cooperative Hydro Embrun	1,985	137%	34	Essex Powerlines	28,640	108%
13	Grimsby Power	11,038	137%	35	Wasaga Distribution	12,985	108%
14	ENWIN Utilities	86,662	131%	36	Horizon Utilities	240,076	107%

	Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved		Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved
15	Niagara-on-the-Lake Hydro	8,672	128%	37	North Bay Hydro Distribution	23,975	107%
16	Hydro One Brampton Networks	149,618	126%	38	Ottawa River Power	13,340	105%
17	Midland Power Utility	7,035	125%	39	Halton Hills Hydro	21,534	104%
18	Espanola Regional Hydro Distribution	3,301	124%	40	Burlington Hydro	66,366	104%
19	London Hydro	152,544	124%	41	Northern Ontario Wires	6,062	101%
20	Kingston Hydro	27,356	124%	42	Waterloo North Hydro	54,674	100%
21	PowerStream	353,284	122%	43	Thunder Bay Hydro Electricity	50,482	100%
22	Toronto Hydro-Electric System	744,252	121%				

An additional 19 distributors have met 80% of their energy target and are listed in Table 5 below.

Table 5 – Distributors that met at least 80% of energy target (kWh)

	Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved		Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved
1	PUC Distribution	33,487	99%	11	Peterborough Distribution	36,058	91%
2	Greater Sudbury	47,187	98%	12	COLLUS Power	16,426	91%
3	E.L.K. Energy Inc.	12,398	97%	13	Lakeland Power Distribution ¹⁴	13,264	87%
4	Renfrew Hydro Inc.	4,246	96%	14	InnPower	15,790	84%

¹⁴ Lakeland Power Distribution merged with Parry Sound Power in 2013. The percentage shown is the combined percentage of the two distributors. When not combined, Lakeland Power Distribution's target achievement is 101% and Parry Sound Power's target achievement is 51%.

	Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved		Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved
5	Brant County Power	9,971	95%	15	Bluewater Power Distribution	36,115	84%
6	Oakville Hydro Electricity Distribution	66,530	93%	16	Whitby Hydro Electric	41,488	83%
7	Milton Hydro Distribution	35,111	92%	17	Canadian Niagara Power	28,627	83%
8	Norfolk Power Distribution	19,559	92%	18	Hydro Hawkesbury	5,499	82%
9	Veridian Connections	117,494	92%	19	Hydro One Networks	1,219,292	80%
10	Orangeville Hydro	11,685	91%				

In accordance with the CDM Code, distributors that have achieved at least 80% of both targets can apply to the OEB for a performance incentive. Of these 62 distributors who have achieved at least 80% of their energy target, 12 also achieved at least 80% of their peak demand target and are eligible to apply to the OEB for a performance incentive. These 12 distributors are listed in Table 6 below.

Table 6 – Distributors eligible to apply to the OEB for a performance incentive

	Distributor	% of Cumulative GWh Target Achieved	% of Peak Demand MW Target Achieved		Distributor	% of Cumulative GWh Target Achieved	% of Peak Demand MW Target Achieved
1	Orillia Power	227%	87%	7	Centre Wellington Hydro	137%	101%
2	Chapleau Public Utilities	179%	123%	8	Midland Power Utility	125%	88%
3	Brantford Power	169%	80%	9	Kingston Hydro	124%	113%
4	Guelph Hydro Electric Systems	165%	120%	10	Fort Frances Power	118%	82%
5	Hydro 2000	160%	109%	11	Horizon Utilities	107%	81%
6	Festival Hydro	156%	86%	12	Peterborough Distribution	91%	83%

There are 13 distributors that did not achieve 80% of their energy target and are listed in Table 7 below. The OEB is undertaking a review of the performance of these distributors on a case-by-case basis.

Table 7 – Distributors that failed to meet 80% of energy target (kWh)

	Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved		Distributor	Total Customers in Service Territory 2014	% of Cumulative GWh Target Achieved
1	Atikokan Hydro	1,663	79%	8	West Coast Huron Energy	3,797	49%
2	Lakefront Utilities	9,996	77%	9	Fort Albany Power	n/a	44%
3	Oshawa PUC Networks	54,731	76%	10	Attawapiskat Power	n/a	44%
4	Wellington North Power	3,731	73%	11	Kashechewan Power	n/a	43%
5	Tillsonburg Hydro	6,935	72%	12	Sioux Lookout Hydro	2,779	40%
6	Hearst Power Distribution Company	2,718	67%	13	Kenora Hydro Electric	5,558	37%
7	Algoma Power	11,650	60%				

3.3 Peak Demand Savings (kW)

Peak demand (kW) savings result from both CDM programs (i.e., those that incent and promote upgraded energy efficiency technologies and primarily target energy (kWh) savings) and demand response programs. Demand response programs mainly realize energy savings during peak hours. A large portion of the peak demand savings resulting from energy efficiency programs will persist from one year to the next, as the new energy efficient technology will remain in place and generally operate at the same time of the day. However, peak demand savings are not cumulative in nature. That is, a peak kW saved in 2011 does not count against a distributor’s peak demand target unless it remained in place and produced a kW saved in 2014. To achieve the peak demand (kW) CDM Target of 1,330 MW, peak demand (kW) savings must have been in place on December 31, 2014.

In past years’ OPA Final Results reports, distributors were provided with three different peak demand (kW) savings amounts. These three amounts are summarized below.

- a) **Net Incremental Peak Demand Savings** (yearly-specific peak demand savings)
These are the new peak demand savings from activity within the specified reporting period (e.g., only those peak demand savings completed in 2013, inclusive of both peak demand savings from both energy efficiency and demand response programs);
- b) **Scenario 1 Peak Demand Savings** (Persisting peak demand savings from CDM programs)
This represents the peak demand savings that will be in place at the end of 2014 and includes a level of persisting peak demand savings from all previous energy efficiency programs. Scenario 1 results assume that peak demand savings from demand response programs persist for one year. One year persistence means that the demand response savings will remain in the reporting year, not beyond; and,
- c) **Scenario 2 Peak Demand Savings** (Persisting peak demand savings from CDM programs and demand response programs)
Similar to Scenario 1, this represents the peak demand savings that will be in place at the end of 2014, including a level of persisting peak demand savings from all previous CDM program year activities, but which also includes persisting peak demand savings from demand response programs.

In past CDM Summary Reports, the OEB has reported the net incremental peak demand savings as these provided the new peak demand reductions distributors achieved within that reporting year. In this report, the OEB has only included the total persisting peak demand savings in 2014 from energy efficiency programs under Scenario 1 as provided by the IESO in its 2014 Summary Report dated September 30, 2015. The IESO has relied on Scenario 1 peak demand results as these results represent both peak demand savings from CDM programs (both persisting from previous year's and new 2014 incremental savings) and Demand Response programs savings from the 2014 program year.

3.3.1 Peak Demand Savings (kW) Results

Overall, distributors reported having achieved 70% of the total peak demand (kW) target (or 928 MW of the targeted 1,330 MW). A total of six distributors have achieved at least 100% of their peak demand (kW) target, while eight others have achieved at least 80%. Distributors who achieved over 100% of their peak demand target include Chapleau

Public Utilities (123%), Guelph Hydro Electric Systems Inc. (120%), Kingston Hydro Corporation (113%), Hydro 2000 Inc. (109%), Tilsonburg Hydro Inc. (104%), and Centre Wellington Hydro Ltd. (101%). As indicated in the OEB’s letter issued on December 17, 2014, the OEB will take no compliance action against distributors who do not achieve 80% of their peak demand target but have achieved at least 80% of their energy savings target.

Table 8 below shows the net incremental peak demand savings by program type in 2011, 2012, 2013, and 2014. The majority of savings were in the Industrial Program followed closely by the Consumer and Business Programs. The net incremental peak demand savings only make up part of the peak demand results that contribute towards the target. In the following section, the additional persisting peak demand savings are discussed.

Table 8 – 2011-2014 Incremental Net Peak Demand Savings (kW)¹⁵

Program/Initiative Name	Net Annual Incremental kW Savings			
	2011	2012	2013	2014
Consumer Program	49,681	72,377	116,886	154,267
Business Program	64,617	98,211	107,261	133,319
Industrial Program	57,098	75,141	166,395	181,066
Home Assistance Program	2	566	2,361	2,466
Aboriginal Program	n/a	n/a	267	549
Pre-2011 Program Completed in 2011	44,945	3,251	772	415
Other (i.e., TOU savings)	n/a	2,304	3,692	61,466
Adjustments to 2011 Results	n/a	1,406	641	1,418
Adjustments to 2012 Results	n/a	n/a	6,260	9,221
Adjustments to 2013 Results	n/a	n/a	n/a	24,391
Peak Demand Savings (kW)	216,343	253,256	404,536	568,578

3.3.2 Persisting Peak Demand Savings from CDM Programs (Scenario 1)

Peak demand savings in 2014, as calculated by the IESO under Scenario 1, represents the peak demand savings that are in place at the end of 2014, including a level of

¹⁵ For consistency, net incremental peak demand totals in Table 8 have been taken from the IESO’s 2014 CDM Summary Report, September 30, 2015.

persisting peak demand savings from all previous energy efficiency programs and peak demand savings related to demand response programs in 2014. Table 9 below shows the Scenario 1 result by program type.

Table 9 – 2014 Persisting Peak Demand Savings from CDM Programs (Scenario 1)

Program/Initiative Name	Scenario 1: 2014 Persisting Peak Demand Savings (kW)	Percentage of Scenario 1: 2014 Persisting Peak Demand Savings (kW)
Consumer Program	239,772	18.0%
Business Program	332,769	25.0%
Industrial Program	189,168	14.2%
Home Assistance Program	5,370	0.4%
Aboriginal Program	816	0.1%
Pre-2011 Program Completed in 2011	49,382	3.7%
Other	67,462	5.1%
Adjustments to Previous Years	43,006	n/a
2014 Persisting Peak Demand Savings (Scenario 1)	927,745	
% of Full OEB Target Achieved	69.8%	

Table 10 shows the annual peak demand savings under the IESO's Scenario 1 which includes peak demand savings from energy efficiency and demand response programs. The demand savings from energy efficiency programs generally persist from one year to the next as the energy efficiency technologies remain in place. The peak demand savings from demand response programs are only assumed to remain in place during the year they were experienced (e.g., the reporting year). Both peak demand savings from energy efficiency and demand response programs in 2014 contribute towards the peak demand target.

Table 10 –2014 Persisting peak demand savings from CDM Programs (Scenario 1)¹⁶

Implementation Period	Annual Results (MW)			
	2011	2012	2013	2014
2011	216.3	136.6	135.8	129.0
2012 ¹⁷	1.4	253.3	109.8	108.2
2013 ¹⁸	0.6	7.0	404.5	122.0
2014 ¹⁹	1.4	10.8	34.2	568.6
Verified Net Annual Peak Demand Savings in 2014				927.7
2014 Annual CDM Capacity Target				1,330
Verified peak Demand Savings Target Achieved in 2014 (%)				69.8%

4. OEB-Approved CDM Programs

There is one distributor-specific OEB-Approved CDM program, PowerStream Inc.'s DIR program. PowerStream Inc. received OEB approval for this CDM program beginning in 2013 and the results have been reported in PowerStream Inc.'s Annual Report and are summarized below. The OEB also deemed TOU pricing to be an OEB-Approved program for the purpose of distributor target achievement because this is consistent with how the targets were set. The IESO's TOU evaluation is briefly discussed below.

4.1 PowerStream Inc. – Direct Install Refrigeration (DIR) Program

PowerStream Inc. launched the DIR Program on September 20, 2013. By the end of 2014, there were 1,032 participants in the program and the program achieved 86% of its original forecast of 1200 participants. PowerStream Inc. notes that this was mainly due to a slower than anticipated start in 2013 rather than an indication of lower than forecasted market potential.

As per the results of the third-party EM&V contractor procured by PowerStream Inc., the DIR yielded overall net peak demand savings of 827 kW and 5.9 GWh of net energy savings.

¹⁶ Information taken from the IESO's 2014 CDM Annual Report Table 1, September 30, 2015.

¹⁷ Includes adjustments to previous year's verified results (shown in blue shaded cells)

¹⁸ Includes adjustments to previous year's verified results (shown in blue shaded cells)

¹⁹ Includes adjustments to previous year's verified results (shown in blue shaded cells)

4.2 Time-of-Use Rates

In the OEB's CDM Guidelines issued on April 26, 2012 (EB-2012-0003), the OEB noted that TOU Rates would be considered an OEB-Approved Program for the purpose of the CDM Targets. The OPA developed the evaluation criteria used to quantify the savings associated with TOU implementation in Ontario.

The OPA started the evaluation of TOU pricing according to its Evaluation, Measurement and Verification (EM&V) protocols in February 2013. The initial evaluation was conducted in 2013 with five distributors.²⁰ The first year results from the evaluation indicated that TOU pricing was successful in reducing residential consumption during summer peak periods. The IESO noted that the evaluation results indicate that the peak demand savings from TOU pricing is a reduction between 1.3% to 5.6% of overall peak demand for the residential sector. The IESO noted that these findings are consistent with estimates from other jurisdictions with similar on-peak to off-peak price ratio.

Three additional distributors were added to the study in 2014 to improve sample representativeness for determining the province-wide impact of TOU rates.²¹ Results from the second year of the study continued to show evidence of load shifting amongst residential and small business customers shifting their usage patterns in Central and Northern Ontario however, on the province-wide scale the IESO did not find evidence of statistically significant impacts.

The final year of the study concluded in August 2015. The distributors included in the IESO's analysis accounted for more than 50% of Ontario's electricity customers. In 2014, the IESO found that residential customers shifted summer peak demand by 0.73% (June-Aug, 1pm-7pm), but no evidence of energy savings was found. There was no evidence of load shifting or energy savings for general service customers. The IESO's final results found a total of 55 MW residential peak demand reduction that was attributed towards the distributors' peak demand (kW) targets from TOU pricing. The IESO noted that these load shifting impacts are consistent with those found in other studies and relatively consistent across regions in Ontario.

²⁰ Hydro One, Toronto Hydro, Hydro Ottawa, Thunder Bay Hydro and Newmarket-Tay Power.

²¹ Cambridge and North Dumfries Hydro, PowerStream, and Greater Sudbury Hydro.

5. CDM Spending

Table 11 shows the amount of total spending for 2011 to 2014 by CDM program. Overall, a total of \$953.7M was spent on CDM programs across Ontario, with the largest amount dedicated to the Business Program followed by the Consumer Program. Over the 2011 to 2014 CDM term, 53.6% of overall spending was in the Business Program and 32.2 % of spending was in the Consumer Program.

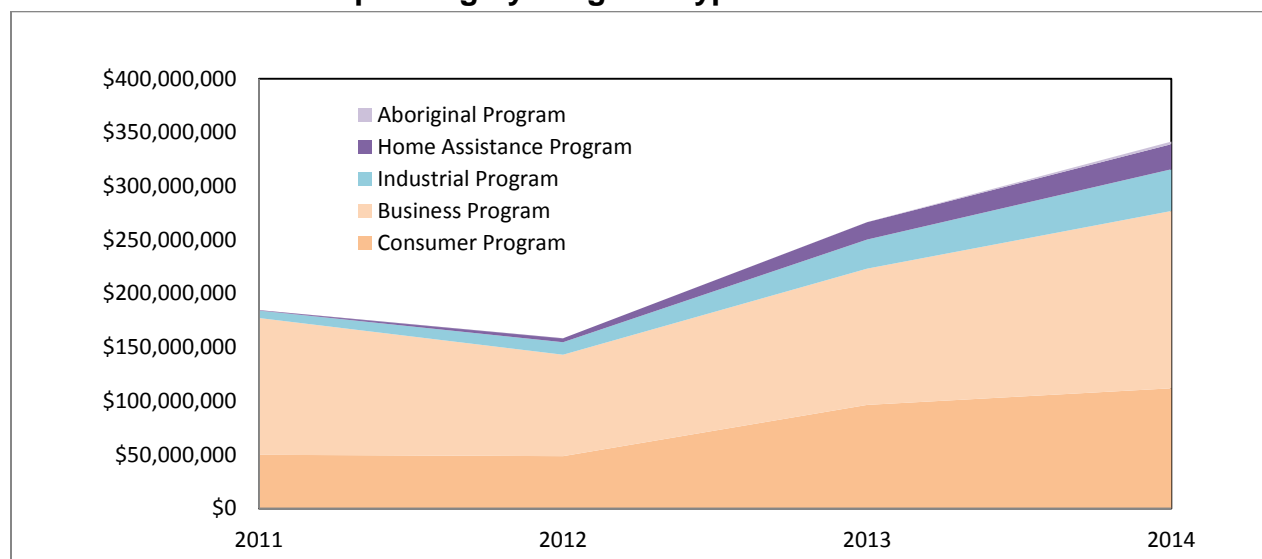
Table 11 – 2011-2014 CDM Spending²²

Program Type	2011-2014 Spending	% of Spending
Consumer Program	\$306,706,971	32.2%
Business Program	\$511,528,836	53.6%
Industrial Program	\$89,235,897	9.4%
Home Assistance Program	\$43,687,525	4.6%
Aboriginal Program	\$2,509,003	0.3%
Central Program Services ²³	\$101,239,778	n/a
Total CDM Spending	\$953,668,233	
Total CDM Spending including Central Program Services	\$1,054,908,011	

Chart 2 below combines the spending by program for each year from 2011 to 2014. Chart 2 indicates that in 2013 and 2014 significant investments were made by the OPA as spending grew after a slight drop in spending in 2012.

²² For consistency, spending totals in Table 11 have been taken from the IESO's 2014 CDM Summary Report, September 30, 2015.

²³ Central Program Services costs include program delivery services such as Evaluation, Measurement, and Verification (EM&V), marketing and awareness campaigns, IT support, call centre, technical review services and settlement services.

Chart 2 – Total CDM Spending by Program Type from 2011-2014

6. General Comments

In their 2014 CDM Annual Reports, distributors provided comments on the 2011-2014 CDM term. Overall, distributors generally noted that the intention of the 2011-2014 CDM framework was to enable customers to benefit from a suite of both OEB-approved and province-wide programs offered by the OPA, and provide a portfolio that would meet both broad and specific customer needs. However, distributors noted that due to certain aspects of the framework, the CDM program offerings to customers were limited.

The main reason provided by distributors was the lack of OEB-Approved programs and that the suite of province-wide OPA programs did not allow as many customers to participate as was initially projected. Distributors noted that this produced limited savings and restricted the associated opportunity for distributors to meet their energy savings and peak demand targets. Throughout the 2011 to 2014 term, the OEB only received three applications for OEB-Approved programs. Of those, one was approved in full, one was partially approved and subsequently withdrawn, and the third was withdrawn prior to the OEB's decision.

Those distributors who did not achieve at least 80% of the energy savings and peak demand targets provided a variety of reasons explaining why results were lower than anticipated, including: Late execution and timing issues with the OPA's province-wide programs, delays in finalizing legal agreements between distributors and the OPA, technical barriers by customers, economic and demographic issues, and staffing issues.

6.1 Program-Specific Comments²⁴

Distributors provided a number of comments about specific programs. Particularly, those distributors who did not satisfy their condition of licence noted some consistent observations. Generally, these distributors noted that they experienced issues with the uptake, delivery and execution of the programs. It was also noted that the full suite of programs were not made available by the OPA right from the start of the CDM term.

Distributors with winter peaking loads noted that the suite of programs offered by the OPA was mainly geared towards distributors with summer peaking loads. Also, it was noted that the remote location of some distributors made it difficult to obtain the appropriate resources to deliver programs. In addition, some distributors indicated that the economic climate was not always conducive to CDM investments, which resulted in lower program participation levels.

The OEB will be reviewing the circumstances and results of the 13 distributors who did not achieve 80% of their energy savings (kWh) target on a case-by-case basis.

The OEB notes that a new framework for 2015 to 2020 has been developed. Ensuring the delivery of CDM programs remains a condition of licences, but the OEB has not established numeric targets. With this new framework distributors will assume greater leadership in the development of new programs.

²⁴ Full OPA-Contracted Province-Wide CDM Program descriptions can be found at www.saveonenergy.ca

Appendix A

2011-2014 CDM Summary Report: Verified Results

CDM Summary Report – 2011-2014 Results
Appendix A

LDC	2014 OEB Peak Demand Target (MW)	Achievement Towards 2014 OEB Peak Demand Target		2011-14 Net Cumulative Energy Savings Target (GWh)	Achievement Towards 2011-2014 Cumulative OEB Energy Target	
		(Scenario 1)			GWh	%
		MW	%			
Algoma Power Inc.	1.28	1.1	83%	7.37	4.5	60%
Atikokan Hydro Inc.	0.2	0.1	33%	1.16	0.9	79%
Attawapiskat Power Corporation	0.07	0.0	10%	0.29	0.1	44%
Bluewater Power Distribution Corporation	10.65	6.0	57%	53.73	45.2	84%
Brant County Power Inc.	3.3	1.6	50%	9.85	9.4	95%
Brantford Power Inc.*	11.38	9.1	80%	48.92	82.5	169%
Burlington Hydro Inc.	21.95	13.4	61%	82.37	85.3	104%
Cambridge and North Dumfries Hydro Inc.	17.68	11.9	67%	73.66	120.5	164%
Canadian Niagara Power Inc.	6.4	3.5	55%	25.08	20.7	83%
Centre Wellington Hydro Ltd.	1.64	1.7	101%	7.81	10.7	137%
Chapleau Public Utilities Corporation	0.17	0.2	123%	1.21	2.2	179%
COLLUS Power Corporation	3.14	1.8	56%	14.97	13.6	91%
Cooperative Hydro Embrun Inc.	0.34	0.2	64%	1.12	1.5	137%
E.L.K. Energy Inc.	2.69	1.0	38%	8.25	8.0	97%
Enersource Hydro Mississauga Inc.	92.98	69.4	75%	417.22	464.3	111%
ENTEGRUS*	12.12	6.4	53%	46.53	50.9	109%
ENWIN Utilities Ltd.	26.81	17.5	65%	117.89	153.9	131%
Erie Thames Powerlines Corporation	5.22	3.2	61%	22.97	38.8	169%
Espanola Regional Hydro Distribution Corporation	0.52	0.3	60%	2.76	3.4	124%
Essex Powerlines Corporation	7.19	3.2	44%	21.54	23.3	108%
Festival Hydro Inc.	6.23	5.3	86%	29.25	45.6	156%
Fort Albany Power Corporation	0.05	0.0	12%	0.24	0.1	44%
Fort Frances Power Corporation	0.61	0.5	82%	3.64	4.3	118%
Greater Sudbury Hydro Inc.	8.22	4.3	53%	43.71	42.6	98%
Grimsby Power Inc.	2.06	1.1	55%	7.76	10.6	137%
Guelph Hydro Electric Systems Inc.	16.71	20.0	120%	79.53	130.9	165%
Haldimand County Hydro Inc.	2.85	1.7	61%	13.3	15.3	115%
Halton Hills Hydro Inc.	6.15	2.9	47%	22.48	23.3	104%
Hearst Power Distribution Company Limited	0.68	0.3	50%	3.91	2.6	67%
Horizon Utilities Corporation	60.36	48.8	81%	281.42	302.5	107%
Hydro 2000 Inc.	0.19	0.2	109%	1.04	1.7	160%
Hydro Hawkesbury Inc.	1.82	0.7	40%	9.28	7.6	82%
Hydro One Brampton Networks Inc.	45.61	27.9	61%	189.54	239.4	126%
Hydro One Networks Inc.	213.66	167.4	78%	1130.21	898.3	80%
Hydro Ottawa Limited	85.26	60.1	71%	374.73	414.9	111%
Innisfil Hydro Distribution Systems Limited	2.5	1.2	49%	9.2	7.8	84%
Kashechewan Power Corporation	0.07	0.0	11%	0.33	0.1	43%
Kenora Hydro Electric Corporation Ltd.	0.86	0.3	31%	5.22	1.9	37%
Kingston Hydro Corporation	6.63	7.5	113%	37.16	46.0	124%
Kitchener-Wilmot Hydro Inc.	21.56	15.8	73%	90.29	103.0	114%
Lakefront Utilities Inc.	2.77	1.1	40%	13.59	10.4	77%
Lakeland Power Distribution Ltd/Parry Sound Power Corporation	3.06	1.3	41%	14.34	12.4	87%
London Hydro Inc.	41.44	19.3	47%	156.64	194.1	124%
Midland Power Utility Corporation	2.39	2.1	88%	10.82	13.6	125%
Milton Hydro Distribution Inc.	8.05	3.9	48%	33.5	30.9	92%
Newmarket - Tay Power Distribution Ltd.	8.76	4.6	53%	33.05	36.2	109%
Niagara Peninsula Energy Inc.	15.49	6.7	43%	58.04	69.9	121%
Niagara-on-the-Lake Hydro Inc.	2.42	1.4	57%	8.27	10.6	128%
Norfolk Power Distribution Inc.	4.25	1.8	42%	15.68	14.5	92%
North Bay Hydro Distribution Limited	5.05	3.5	70%	26.1	28.0	107%
Northern Ontario Wires Inc.*	1.06	0.6	54%	5.88	5.9	101%
Oakville Hydro Electricity Distribution Inc.	20.7	10.9	53%	74.06	69.1	93%
Orangeville Hydro Limited	2.78	1.7	60%	11.82	10.8	91%
Orillia Power Distribution Corporation	3.07	2.7	87%	15.05	34.1	227%
Oshawa PUC Networks Inc.	12.52	5.7	45%	52.24	39.5	76%
Ottawa River Power Corporation	1.61	1.0	63%	8.97	9.4	105%
Peterborough Distribution Incorporated	8.72	7.2	83%	38.45	35.0	91%
PowerStream Inc.*	95.57	73.8	77%	407.34	496.3	122%
PUC Distribution Inc.	5.58	3.3	60%	30.83	30.5	99%
Renfrew Hydro Inc.	1.05	0.5	52%	4.86	4.7	96%
Rideau St. Lawrence Distribution Inc.	1.22	0.7	59%	5.1	7.3	142%
Sioux Lookout Hydro Inc.	0.51	0.2	30%	3.32	1.3	40%
St. Thomas Energy Inc.	3.94	2.4	62%	14.92	17.9	120%
Thunder Bay Hydro Electricity Distribution Inc.*	8.48	5.9	70%	47.38	47.2	100%
Tillsonburg Hydro Inc.*	2.29	2.4	104%	10.25	7.4	72%
Toronto Hydro-Electric System Limited	286.27	206.3	72%	1303.99	1582.6	121%
Veridian Connections Inc.	29.05	16.0	55%	115.74	106.4	92%
Wasaga Distribution Inc.	1.34	0.6	42%	4.01	4.3	108%
Waterloo North Hydro Inc.	15.79	8.1	51%	66.49	66.2	100%
Welland Hydro-Electric System Corp.	5.56	2.7	48%	20.6	23.9	116%
Wellington North Power Inc.	0.93	0.5	52%	4.52	3.3	73%
West Coast Huron Energy Inc.	0.88	0.5	54%	8.28	4.0	49%
Westario Power Inc.	4.24	2.4	57%	20.95	23.2	111%
Whitby Hydro Electric Corporation	10.9	6.1	56%	39.07	32.4	83%
Woodstock Hydro Services Inc.	4.49	3.1	68%	18.88	38.1	202%
ALL LDCs (IESO-Province Wide Results)	1,330	928	70%	6,000	6,553	109%
ALL LDCs (Includes additional results)*	1,330	929	70%	6,000	6,560	109%

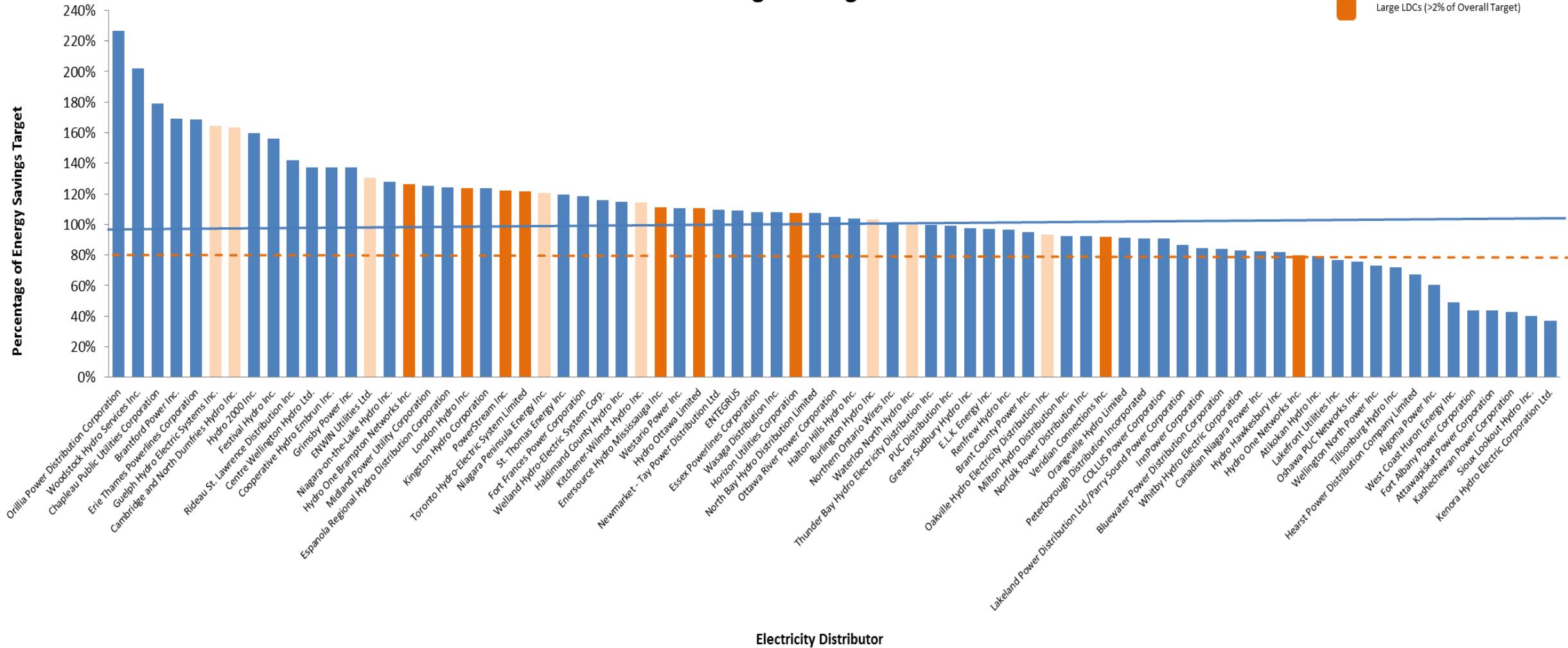
*Additional results, incremental to those included in each distributors' CDM Annual Report, have been included within the table. These reflect IESO-adjustments to 2011-2014 Final Results for Brantford Power Inc., ENTEGRUS, Northern Ontario Wires Inc., Thunder Bay Hydro Electricity Distribution Inc., and Tillsonburg Hydro Inc. PowerStream Inc.'s OEB-Approved program results have also been included in the table.

Appendix B

2011-2014 CDM Summary Report: Distributor Progress Charts

2011-2014 Cumulative Energy Savings (kWh) Percentage of Target Achieved

- Small LDCs (<1% of Overall Target)
- Medium LDCs (1-2% of Overall Target)
- Large LDCs (>2% of Overall Target)



2014 Peak Demand Savings (kW) Percentage of Target Achieved (Scenario 1)

- Small LDCs (<1% of Overall Target)
- Medium LDCs (1-2% of Overall Target)
- Large LDCs (>2% of Overall Target)

