

Kingston Hydro Corporation

Conservation and Demand Management Strategy 2011 - 2014

Filed with the
Ontario Energy
Board

November 1, 2010



Kingston
Hydro

Contents

Introduction.....	5
Kingston Hydro CDM Strategy Summary.....	6
1. Distributor’s Name.....	7
2. Total Reduction in Peak Provincial Electricity Demand (MW) Target	7
3. Total Reduction in Electricity Consumption (kWh) Target	7
4. Kingston Hydro 2011-2014 CDM Strategy	7
4.1 Kingston Hydro’s Customer Base	7
4.2 Kingston Hydro, its Affiliates, and its Community – Sustainable Energy Leadership	8
4.3 Kingston Hydro CDM Team and Resources Budget	9
4.3.1 Kingston Hydro non-variable CDM Program Delivery Costs.....	10
4.4 Kingston Hydro Cumulative CDM Program Results Forecast.....	12
4.5 2011 CDM Strategy	13
4.5.1 Cumulative Peak Demand Reduction (MW)	13
4.5.2 Cumulative Consumption Reduction (GWh)	13
4.5.3 2011 Kingston Hydro CDM Budget	13
4.5.4 OPA Program Strategy Notes.....	14
4.6 2012 CDM Strategy	18
4.6.1 Cumulative Peak Demand Reduction (MW)	18
4.6.2 Cumulative Consumption Reduction (GWh)	18
4.6.3 2012 Kingston Hydro CDM Budget	18
4.6.4 OPA Program Strategy Notes.....	19
4.6.5 Ontario Energy Board Approved Programs	19
4.7 2013 CDM Strategy	20
4.7.1 Cumulative Peak Demand Reduction (MW)	20

4.7.2	Cumulative Consumption Reduction (GWh)	20
4.7.3	2013 Kingston Hydro CDM Budget	20
4.7.4	OPA Program Strategy Notes.....	21
4.7.5	Ontario Energy Board Approved Programs	21
4.8	2014 CDM Strategy	22
4.8.1	Cumulative Peak Demand Reduction (MW)	22
4.8.2	Cumulative Consumption Reduction (GWh)	22
4.8.3	2014 Kingston Hydro CDM Budget	22
4.8.4	OPA Program Strategy Notes.....	23
4.8.5	Ontario Energy Board Approved Programs	23
5.	OPA-Contracted Province-Wide CDM Programs	24
5.1	Consumer Programs.....	24
5.1.1	Appliance Retirement/Exchange	24
5.1.2	Instant Discounts (Rebates).....	24
5.1.3	HVAC Discounts (Rebates)	25
5.1.4	Demand Response	25
5.1.5	Mid-Stream Incentives.....	25
5.1.6	Enabling Tools.....	26
5.1.7	Capability Building	26
5.1.8	Marketing.....	26
5.1.9	Low-Income CDM Programs	27
5.2	Commercial and Industrial Programs.....	27
5.2.1	Direct Installed Lighting & Direct Serviced Space Cooling.....	27
5.2.2	Demand Response	28
5.2.3	Equipment Replacement	28
5.2.4	Existing Building Commissioning	29
5.2.5	New Construction – All Buildings and Customer Types.....	31

5.2.6	Demand Response 1 (DR 1)	31
5.2.7	Demand Response 3 (DR 3)	32
5.2.8	Capability Building	33
6.	Potential Ontario Energy Board Approved Programs.....	35
6.1	Ontario Energy Board Approved Program Strategy.....	35
6.2	Potential OEB Approved Programs	35
6.2.1	Bill Presentment – Peer to Peer comparisons	35
6.2.2	Student and Landlord Initiative	35
6.2.3	Fuel Switching – Coop with gas utility	35
7.	Program Mix	37
7.1	Residential Customer Analysis	37
7.2	Commercial and Institutional Customer Analysis	38
7.3	Industrial Customer Analysis.....	39
8.	CDM Programs Coordination.....	40

Introduction

Kingston Hydro is committed to helping its customers make the most effective use of their energy expenditures and develop more sustainable energy consumption patterns. Kingston Hydro's 2011-2014 Conservation and Demand Management (CDM) plan outlines our strategy for continuing this commitment while meeting and exceeding provincially mandated CDM targets of a 37 GigaWatt-Hour (GWh) reduction in electricity consumption and a 7 MegaWatt (MW) reduction in peak demand co-incident with province wide peak energy demand periods.

On September 16th, 2010, the Ontario Energy Board (OEB) enacted the Conservation and Demand Management Code for Electricity Distributors (CDM Code). This code requires Kingston Hydro to file a strategy with the OEB that includes the following:

1. A high-level description of a year by year plan, with annual milestones, for achieving CDM targets;
2. A description of each of the CDM programs, split into Ontario Power Authority (OPA) Contracted and Board Approved programs, that the distributor plans to undertake in pursuit of its targets. The description includes the program names, years of operation, purpose, target customers, and projected budgets and results where available;
3. Confirmation that CDM programs will be offered to all customer types with regard to the distributor's customer base;
4. A section describing how the distributor will co-ordinate CDM efforts with other electricity or natural gas distributors, social service agencies, government and government agencies, the OPA, and other organizations, and;
5. A statement regarding the Local Distribution Company's (LDCs) intention to offer CDM programs to low-income customers.

In addition, the OEB prescribes a CDM Strategy Template in Appendix B to the CDM Code that forms the structure of this strategy document.

The CDM Code was enacted on Sept. 16th, 2010. CDM Strategies for all LDCs including Kingston Hydro are due to be filed by November 1st, 2010. New information on OPA programs, budgets, funding formulae and distributor expectations are scheduled for release during the last weeks of October 2010 or later, and no OEB approved programs have been applied for or approved at the time of filing this strategy. As such, this strategy is not intended to be a firmly set or comprehensive plan, but rather a starting point for Kingston Hydro and its stakeholders to work from in pursuit of CDM targets in Ontario's quickly evolving electricity sector.

Kingston Hydro's unique customer base provides both CDM opportunities and challenges, as does its relationship with Utilities Kingston and its status as a smaller, municipally-owned utility. With a strong track record of collaboration with local stakeholders on sustainable energy issues, Kingston Hydro looks forward to helping Ontario ensure a secure supply of electricity while reducing the overall cost and environmental impact of electricity consumption through local CDM initiatives.

Kingston Hydro CDM Strategy Summary

Kingston Hydro will focus on initiatives in the institutional sector to meet the bulk of its CDM Consumption Targets as these customers represent almost 60% of Kingston Hydro's electricity consumption while offering the most cost effective CDM opportunities. For smaller commercial and retail customers, special focus will be placed upon sub-contracted direct install and prescriptive equipment replacement programs. Kingston's fewer industrial customers will be managed as part of the Commercial and Institutional portfolio, with specific programs to be implemented if appropriate as determined by collaboration between Kingston Hydro and these customers. Kingston Hydro's strategy focuses on implementation of OPA Contracted Programs to meet the bulk of 2011-2014 CDM Targets, with OEB approved programs to be developed to fill gaps in its strategy should it become apparent that OPA Contracted Programs will not be sufficient.

Kingston Hydro's residential customers are already 7% below provincial per capita electricity consumption averages and have been early adopters of numerous CDM programs. While Kingston Hydro will rely on OPA led, province wide initiatives in this sector, Kingston's demographic factors make deeper savings in this sector difficult to achieve. Special focus may be placed on low-income or innovative board approved programs targeting this sector should Kingston Hydro need to find additional savings to meet CDM targets.

Significant effort will be placed in Demand Response generation to meet peak shaving targets, as Kingston Hydro's customer base has a lower than average available dispatchable load.

Large institutional customers form the bulk of cost-effective conservation opportunities in Kingston Hydro's territory. As working with these institutions requires personal relationships and projects can have long, complex development timelines, allocation of appropriate customer relations resources will be key.

Evaluation, Verification, and Measurement will become a priority for Kingston Hydro as it will for all Ontario LDCs. Ensuring that appropriate technical, administrative, and overhead costs are allocated to these activities is vitally important to ensure effective employment of CDM resources. Third parties may be engaged to perform some of these services if cost efficiencies can be found by doing so.

Kingston Hydro believes that implementing this strategy will net summer peak CDM savings of 8.75 MW and electricity consumption savings of 37 GWh. These results represent 132% of its peak target and 100% of its consumption target as set by the Ontario Energy Board. If Kingston Hydro achieves forecasted CDM results, it will earn \$165,375 in peak target incentives and \$110,000 in consumption target incentives from the OEB. This represents a potential annualized increase in Earnings Before Income Taxes for Kingston Hydro of 3% based on 2009 reported financial results.

Specifics regarding Ontario Power Authority and Ontario Energy Board funding mechanisms and amounts were not available at the time this strategy was developed, but it has been widely published that incentives paid and capital investments made by Kingston Hydro in its customers' CDM initiatives will be recoverable either OPA Contracted or OEB approved channels. Combined administrative and marketing funding from the OPA and OEB needs to be approximately \$500,000/year in order for Kingston Hydro to accomplish its CDM goals without re-directing capital and operating expenditures required to maintain a safe and reliable distribution system. This estimate is based on assumptions derived from published indications of expected CDM cost effectiveness and past experience with OPA contracted programs.

1 Distributor's Name

Kingston Hydro Corporation.

2 Total Reduction in Peak Provincial Electricity Demand (MW) Target

7 MW, persisting at the end of 2014, based on Kingston Hydro representing a 0.5% contribution to provincial peak demand and a provincial total peak demand CDM target of 1,330 MW.¹ Compared to Kingston Hydro's average annual summer peak of 115 MW, this represents a 6.1% reduction in peak demand.

3 Total Reduction in Electricity Consumption (kWh) Target

37 GWh (GigaWatt hours), based on Kingston Hydro customers representing 0.49% of provincial residential electricity consumption, 0.65% of provincial non-residential energy consumption and a provincial total consumption CDM target of 6000 GWh.² Compared to Kingston Hydro's 7-year average total GWh consumption of 729 GWh³, this represents a 5.1% reduction in annual electricity consumption persisting past 2014.

4 Kingston Hydro 2011-2014 CDM Strategy

4.1 Kingston Hydro's Customer Base

Kingston Hydro's distribution territory is the central part of the City of Kingston, stretching east from Little Cataraqui Creek to the Cataraqui River, and south from Highway 401 to Lake Ontario. It is geographically bound on three sides by Hydro One distribution territory and is entirely urban. Kingston Hydro's distribution territory is nearly entirely built out within these boundaries leaving little room for green-field housing, commercial, or industrial development compared to other similar-sized Ontario Local Distribution Companies (LDCs).

Kingston is one of Canada's oldest cities. Much of Kingston Hydro's territory consists of small commercial building and housing stock of pre-1965 construction. Its many institutional buildings range from 100+ years old to recently constructed LEED certified buildings. The major employers in Kingston Hydro territory are CFB Kingston, Queen's University, Hospitals, St. Lawrence College, Prisons, and other government or public sector institutions and related services, followed by jobs in healthcare, retail and small or medium sized commercial or industrial businesses.

¹ Ontario Energy Board's June 22, 2010 proposed CDM Targets

² ibid

³ Kingston Hydro 2003-2009 Consumption Statistics

Kingston Hydro’s customer base consists largely of residential and institutional services. Commercial and industrial customers are generally of a smaller size and smaller in number compared to other LDCs. As of December 31, 2009, Kingston Hydro’ customer base has the following characteristics:

Customer Type	kWh Billed	# of Customers
Residential	200,816,087	23,223
General Service <50kW	96,953,020	3,255
General Service >50kW & Large Users	431,258,755	351
Unmetered Scattered Load	2,341,330	159

A detailed analysis of each of Kingston Hydro’s customer types is contained in Section 7. This analysis was used as the basis of Kingston Hydro’s CDM Strategy for meeting its peak and consumption targets in a cost effective manner while providing CDM opportunities for all customer types.

4.2 Kingston Hydro, its Affiliates, and the Kingston Community: Sustainable Energy Leaders

In the past few years, Kingston as a community has demonstrated commitment to sustainable energy initiatives, including electricity CDM efforts. Kingston Hydro pilot tested the Great Refrigerator Roundup Program, was a successful early adopter of the ERIP and Small Commercial Direct Install Programs, and captured the 2009 Ontario Electricity Distributors Association Award for Environmental Excellence for its efforts to facilitate renewable energy connections peak shaving co-generation, and development of Ontario’s first “Distributed Generation for Utility Linepersons” Safety Course in partnership with St. Lawrence College. A first place finish in the 2009 Woodstock Cup Power Pledge Community Challenge, followed by a strong 3rd place finish in 2010, was facilitated by engaging local student and non-profit groups in effective social marketing campaigns. Kingston Hydro’s strong ties within the community have increased knowledge and capacity for innovative sustainable energy efforts both internally and throughout its distribution territory.

In 2009, Kingston Hydro’s municipal government shareholder adopted the official goal of becoming Canada’s most sustainable city. The region’s Economic Development Agencies identify the sustainable energy sector as one of the area’s fastest growing industries, with thousands of MW of renewable generation capacity under development and national and internationally renowned research and post secondary technical education in CDM and Renewable Energy taking place at its colleges and universities. Many of Kingston’s institutions have “walked the walk” by engaging in significant CDM and renewable energy investment over in the past 5 years. In 2007, Kingston Hydro affiliate Utilities Kingston, started Canada’s first solar domestic water heater rental program to complement its existing appliance rental business offering high efficiency, non-electric water heating options to those in the greater Kingston area.

While these past successes have developed significant awareness, investment, and capacity within the community for electricity CDM, it also means that Kingston Hydro will have to dig deeper for electricity savings as much of our community’s “low hanging fruit” has already been harvested.

The CDM Code requires LDCs to work with local natural gas distributors and other utility providers in efforts to meet CDM targets. Utilities Kingston, a Kingston Hydro affiliate, is contracted to operate and manage Kingston Hydro's electricity distribution system. Utilities Kingston also provides natural gas distribution, local water and sewer service, and water heating appliance rentals to customers within Kingston Hydro's territory. All affiliated utility services are in a unique "one-bill, one account" package to customers in Kingston.

While Kingston Hydro may be able to leverage this integrated and unique relationship with its customers in development of Board Approved CDM programs and implementation of OPA Contracted CDM programs, it will need to carefully manage delivery of electricity conservation messages, ensuring that they are highlighted rather than being lost in the shuffle with sewer, water, natural gas, or appliance rental business communications. Care will also have to be taken to respect the privacy of customers and interests of consumers in line with federal privacy legislation and the OEB's Affiliate Relationships Code.

4.3 Kingston Hydro CDM Team and Resources Budget

Due to demographic factors and early uptake of conservation initiatives in years prior to 2011, Kingston Hydro will have a challenge meeting electricity conservation targets, especially if it is unable to facilitate registration of a large co-generation facility in its territory in the "Demand Response III" program. Given Kingston Hydro's customer base, it is believed that implementation of OPA programs, if done aggressively, may be sufficient to meet its targets. Kingston Hydro's budget for administration and resources is based on estimates of its proportional share of expected OPA resources to be allocated to LDCs across the province for administration, marketing, and technical efforts in delivery of OPA contracted programs.

The total budget estimated using information available at the time suggests that should Kingston Hydro be able to meet 132% of its peak CDM target and 100% of its consumption CDM targets, it can expect total allocations from the OPA of approximately \$2,000,000 total (\$500,000 / year on average) to cover administrative, marketing, delivery and technical expenses over the 4 year period. The allocation methodology for OPA funding has yet to be finalized, but it is assumed that much of this funding will be allocated based on results. The annual budget accounts for startup costs in year one, the bulk of CDM results to be generated in 2012 and 2013, and a lower 2014 budget for OPA Contracted programs as cost efficiencies will have been developed and market penetration and uptake will have peaked by the strategy's final year.

It is assumed that funding for all energy efficiency or peak shaving incentives and direct install measures will be funded by the OPA or through OEB approved Global Adjustment funds, and are assumed to be a flow-through. If the volume of payments required to be made by Kingston Hydro in advance of re-imburement by the OPA is sufficiently large to create financial impacts for the LDC, this budget may be reflected to add carrying costs and/or risk premiums related to financing CDM initiatives.

Should the budget be revealed to be out of line with cost-effectiveness criteria or OPA funding levels, or be insufficient to meet Kingston Hydro's CDM targets, it shall be revised in advance of Kingston Hydro's first annual CDM report to the OEB.

4.3.1 Kingston Hydro non-variable CDM Program Delivery Costs

The key to a successful CDM strategy is ensuring that sufficient and properly qualified human resources are allocated to manage the diverse aspects of CDM programming. The following CDM team budget reflects the non-variable human resources Kingston Hydro believes is required in order to meet and exceed CDM targets in accordance with the opportunities and challenges it faces. This base level of staffing will ensure that CDM programming is strategic, cost effective, and reactive to market conditions while maintaining CDM program continuity throughout the 2011-2014 period.

In order to manage programs effectively, OPA initiatives that have similar target groups and similar claims processing workflows will be managed as a group. Grouping projects into portfolios will allow Kingston Hydro customers who are interested in conservation, one point of contact for all programs that apply to their customer type, while creating administrative and marketing efficiencies. Programs will be grouped into the following portfolios:

- Demand Response (DR I and DR III) initiatives and interactions with aggregators.
- Energy Audit, Prescriptive and Custom Equipment Replacement, Commissioning, and New Construction incentives targeted at commercial, institutional, and industrial customers (ERIP programs).
- Small Commercial Lighting and Space Cooling Direct Install Programs (SCDI programs).
- Consumer programs.
- Low Income Programs.
- OEB-approved programs.

Non-variable resources required by Kingston Hydro in support of its CDM Strategy are as follows:

- **CDM Officer - \$63,000/year**
 - UK staff position - \$90,000 salary/year, allocated ½ to Kingston Hydro, plus 40% Overhead & Benefits allocations.
 - Responsible for overall management of CDM program portfolio, community engagement, marketing, business planning, public relations, stakeholder reporting and engagement, and assumes overall responsibility for meeting CDM targets.
 - Responsible for lead development and implementation of OEB Approved CDM Programs.
 - Responsible for CDM-related change management within Kingston Hydro and Utilities Kingston.
 - Responsible for co-ordinating and leveraging CDM efforts in collaboration with Kingston Hydro affiliates and community organizations.
 - Responsible for monitoring and managing CDM related regulatory and policy affairs.
 - Responsible for managing customer relations and implementation for DR I, DR III and CDM at the program level within larger institutions and customers.

- Responsible for management of Kingston Hydro's CDM Advisor & all CDM sub-contractors.
- Manages Low Income programs with social services providers and direct install teams.
- Responsible for preparing reports to stakeholders and management on CDM results, CDM annual reports, Lost Revenue Adjustment Mechanism or Shared Savings Mechanism filings to the OEB, & other reports or applications as required.
- **CDM Advisor-inspector and/or Sub-contracted services - \$84,000/year**
 - Equivalent of one UK Staff Position - \$60,000/year salary, devoted wholly to Kingston Hydro, plus 40% Overhead & Benefits allocations.
 - Conducts energy efficiency consultations to as many C&I customers as possible, focusing on those doing more than simply direct install or small prescriptive projects.
 - Manages CDM initiative level technical audit, consulting, and verification tasks with Kingston Hydro customers.
 - Conducts on site inspections, Custom Measure verification and modeling, and provides assistance in OPA invoicing, CDM reporting, administration and other paperwork.
 - Should be able to perform Pre-Project Assessments and Commissioning tasks or handle operational level contracting and administration for such services.
 - Should have technical qualifications including as an engineering certificate or designation, in line with OPA Contracted Program requirements.
 - Certain tasks within this budget item may be sub-contracted should this improve program delivery flexibility, cost effectiveness, or to engage the best expertise available.
- **Administration Resources – \$63,000**
 - \$45,000/year FTE devoted to Kingston Hydro for appointment booking, finance and accounting tasks, accounts payable and receivable, and general administration, plus Overhead and Benefits.
 - This allocation accounts for CDM training and time spent with customers by Kingston Hydro's contracted Service Advisors and Customer Service Representatives in relation to CDM initiatives. Acts as an offset for increased Accounting, IT, Billing, and Technical Services workload placed on existing non-CDM specific Kingston Hydro resources.
- **Annual Vehicle, Training, Equipment, Software, & Travel Costs - \$35,000**
 - 1 sub-compact hybrid vehicle (approx. \$30,000 total, allocation of \$7500/year)
 - 15,000 km/year @ \$0.50/km = \$7,500/year
 - Equipment & Software licensing allowance per year - \$7500
 - Training Budget - \$2500/staff resource/year = \$7500/year
 - Travel Budget – 10 trips for CDM specific staff resources / year @ \$500/trip = \$5000

- **Annual non-variable marketing budget \$30,000 / year**
 - Includes non-program specific marketing and marketing done to build awareness of Kingston Hydro’s CDM portfolio as a whole within the community.
 - May include social marketing partnerships with student or non-profit groups.
 - May include school or employer-based CDM engagement initiatives.
 - May include development of unified, Kingston Hydro specific marketing materials, initiatives, and campaigns in support of general CDM awareness.
 - Includes development and production of monthly Utilities Kingston Conservation e-newsletter & associated mass/social media or PR campaigns.

Total non-variable costs are projected to be \$275,000 per year, without inclusion of any incentive or direct install payments flowed through Kingston Hydro from the OPA to customers, any additional OEB Programs, or any participation in the Industrial Program “Roving Energy Manager” or “Key Account Manager” funding available through partnership with other LDCs. Allocation of these non-variable resources to the OPA Contracted and OEB Approved programs is outlined in the year-by-year plan.

Variable Cost budgeting related to each of the OPA Contracted and/or OEB Approved Programs is contained in the year-by-year plan. Variable Costs will largely be spent on sub-contracted program delivery, marketing, consumer education, measurement and verification.

4.4 Kingston Hydro Cumulative CDM Program Results Forecast

	2011	2012	2013	2014	4 Year Total
<i>Consumer</i>					
MWh	1397.92	3261.82	3261.82	1397.92	9319.48
MW	0.15	0.35	0.35	0.15	1.00
<i>Commercial and Institutional</i>					
MWh	3914.1835	9133.095	9133.095	3914.184	26094.55689
MW	5.25	0.75	0.75	0.75	7.5
<i>Industrial</i>					
MWh	0	0	1863.897	0	1863.896921
MW	0	0	0.25	0	0.25
<i>CUMULATIVE TOTALS</i>					
MWh	5312.11	12394.91	14258.81	5312.11	37277.94
% of Total	14.25%	33.25%	38.25%	14.25%	100.00%
% of OEB CDM Target	14.36%	33.50%	38.54%	14.36%	100.75%
MW	5.40	1.10	1.35	0.90	8.75
% of Total	61.71%	12.57%	15.43%	10.29%	100.00%
% of OEB CDM Target	81.52%	16.61%	20.38%	13.59%	132.09%

4.5 2011 CDM Strategy

4.5.1 Cumulative Peak Demand Reduction (MW)

5.4 MW, 82% of CDM Target

4.5.2 Cumulative Consumption Reduction (GWh)

5.3GWh, 14.25% of CDM Target

4.5.3 2011 Kingston Hydro CDM Budget

Kingston Hydro 2011 CDM Programming Budget

Program Portfolio	Portfolio Totals	Budget Detail						
		CDM Officer	CDM Advisor/Subs	Technical & Administration	Vehicle, Travel, Education, Equipment	Non-Variable Marketing	Variable Marketing Costs	Other Sub-Contracted or Variable Costs
<i>Demand Response</i>	\$78,401	\$18,900	\$12,600	\$12,600	\$5,833	\$1,000	\$10,748	\$16,719
<i>ERIP</i>	\$142,423	\$18,900	\$33,600	\$12,600	\$5,833	\$7,000	\$14,331	\$50,158
<i>SCDI</i>	\$108,614	\$6,300	\$12,600	\$12,600	\$5,833	\$5,000	\$16,122	\$50,158
<i>Consumer</i>	\$153,845	\$12,600	\$25,200	\$12,600	\$5,833	\$17,000	\$30,453	\$50,158
<i>Low Income</i>	\$24,733	\$6,300		\$12,600	\$5,833	\$0	\$0	\$0
<i>OEB Approved</i>	\$5,833	\$0	\$0	\$0	\$5,833	\$0	\$0	\$0
Totals	\$513,849	\$63,000	\$84,000	\$63,000	\$35,000	\$30,000	\$71,655	\$167,195

Total OPA Funding Based on Projected Results	\$813,849	
LESS - 2011 Non-Variable Budget	\$275,000	
Variable Funding Available (OPA Forecast Based on projected results	\$538,849	
LESS - Carry over to years 2&3 (one large customer DR skewing results)	\$300,000	\$100,000 per year
Total Variable Funding 2011	\$238,849	
Marketing Costs @ 30% of Variable Funding	\$71,655	
Sub-Contracted or other Costs @ 70% of Variable Funding	\$167,195	

Note - OPA LOW INCOME PROGRAM DESIGN NOT RELEASED AS OF STRATEGY FILING - Budget allocation to be made once program design finalized
Marketing Funds allocated to Consumer Programs as placeholder

4.5.4 OPA Program Strategy Notes

4.5.4.1 Demand Response (DR 1, DR 3)

Kingston Hydro will welcome aggregators within its service territory. It will endeavour to make potential DR 1 customers aware of opportunities, and the CDM Officer may examine the opportunity to partner with one or more aggregators or sub-contractors to engage commercial, institutional, and retail DR 1 or DR 3 participants. Before the end of 2011, Kingston Hydro will make the decision as to whether it will self-aggregate DR participants, sub-contract exclusively with one or more DR aggregators, and/or work with many aggregators interested in enrolling Kingston DR participants.

A focus of Kingston Hydro's CDM strategy for 2011 will be working with Queen's University and Kingston General Hospital (KGH) to enable as much demand response as possible from their jointly owned cogeneration facility. This facility is expected to register for the program in early 2011. In the coming months, upgrades to substation MS1, operational accommodations, and operator training will occur in order to allow this facility to provide optimal demand response capability. A transfer trip connection to the Gardiners TS will also be required. Kingston Hydro will work with Hydro One on this generator's behalf to engineer and implement this solution.

Without these upgrades, safety of Kingston Hydro workers and customers may not be guaranteed in all possible operating scenarios, and it is unclear whether or not provincial peak load demand response would be 100% reliable in the long term as the university and hospital are switched from a feed originating at the Frontenac TS 115kV transmission connection to the Gardiners TS 230kV transmission connection under Kingston Hydro and Hydro One's joint peak load contingency plan. Should Kingston Hydro be able to invest its own resources in MS1 upgrades and revised operational strategies, while helping Queen's and KGH work through the Connection Impact Assessment process with Hydro One in regards to transfer trip at the Gardiners TS, 71% of Kingston Hydro's 2011-2014 Peak Demand reduction target could be met, while setting the stage for an additional 2.5 MW of demand response should the co-gen facility be able to address limited summertime heat loads and bid its remaining summertime generating capacity into the DR 3 program. Kingston Hydro will work with Queen's and KGH to investigate absorption cooling or other options that may be able to utilize waste heat to further reduce peak electricity demand.

Initial contact will be made with institutions such as Kingston Hospitals, Prisons, Government Facilities, and CFB Kingston, as well as private industry and Utilities Kingston to assess the opportunity for utilization of backup generation as demand response facilities. Those facilities with reasonable technical and economic potential to provide demand response load shedding or distributed generation in line DR program requirements will be prioritized and targeted by Kingston Hydro, and its DR 1 and DR 3 strategies in coming years will flow from these efforts.

Finally, Kingston Hydro may be able to collaborate with its affiliates Utilities Kingston and the City of Kingston to facilitate development of combined heat and power or district heating facilities within its territory. Preliminary exploration of this opportunity will be carried out to assess whether reasonable demand response

and/or load displacement capability can be created, and whether any existing electrical heating loads can be replaced with district heating systems. Any savings will likely not occur until late in the CDM target period as such initiatives have long development timeframes. Kingston Hydro's strategy does not include an expectation of CDM results from such initiatives.

Primary responsibility for DR will rest with the CDM officer, supported by the CDM advisor, Kingston Hydro technical staff, and Utilities Kingston natural gas experts. Utilities Kingston Technical Services staff dedicated to Kingston Hydro will need to invest significant resources to enable DR generation in 2011.

For the purposes of budgeting, direct install load control or "peaksaver" type initiatives will not be included as part of Kingston Hydro's DR program, but will form a part of the Direct Install initiatives and Consumer programming.

Established personal relationships will be leveraged to discuss Demand Response with high-level executives at Kingston Hydro's largest customers. Marketing will consist of staff time to educate customers about DR opportunities, and work with customer staff to identify opportunities. For aggregated DR programs, Kingston Hydro will subcontract marketing activities to aggregators, ensuring that a consistent, trusted message is delivered to customers that will not be confused with Direct Install or Equipment Replacement programs. All Equipment Replacement Program customers will learn about Demand Response programs as part of their initial site visit.

4.5.4.2 Commercial and Institutional Programs

OPA Contracted Commercial and Institutional Programs form the core of Kingston Hydro's CDM Strategy. Direct Install retrofit projects will be the focus for GS<50 and commercial customers. Kingston Hydro will work from the customer database it maintains for the Power Savings Blitz to identify customers who have already conducted PSB retrofits, and market Peaksaver DR and Direct Install Space Cooling options to them. Customers who have not taken part in the PSB program will receive targeted communications and/or personal visits to market lighting, A/C, and DR direct install options.

Kingston Hydro has contracted out delivery of its Direct Install program. Efforts will be made to develop closer relationships with its contractors, educating them about opportunities outside of the Direct Install Portfolio. Intake for all customers interested in demand response may be conducted by Kingston Hydro staff to determine whether the customer can achieve maximum electricity savings through Direct Install or more comprehensive programs. With additional resources made available by OPA funding in place, Kingston Hydro will be able to more closely manage this program to ensure that the best interests of its customers and Kingston Hydro's conservation goals are a focus of those tasked with implementing this program envelope.

Once again, established personal relationships and collaborative work between institution staff and Kingston Hydro CDM and Technical staff will be the foundation of marketing and education efforts for C&I programs at Kingston Hydro's larger customers. Projects at large institutions may be multi-faceted, multi-year, and integrated with water or other energy conservation measures. Careful management

of these relationships and establishment of ongoing programs with appropriate tracking done in collaboration with institutional staff will be key to the overall success of Kingston Hydro's C&I programs. In 2011, significant work will be done on developing relationships, tracking protocols, and multi-year CDM forecasts for these facilities.

Kingston Hydro's relationship with Utilities Kingston's CDM Staff means that it may be able to develop a methodology in 2011 to attribute electricity savings to water conservation projects. While this is currently possible by way of a custom ERIP application, Kingston Hydro and Utilities Kingston may be able to develop a standardized engineering methodology and input factors for projects in Kingston. Time may be spent to develop such methodology with a target for 2012 availability.

Kingston Hydro will reach out to the electrical contractor community through event marketing, personal visits, and other channels to make them aware of the incentives available for certain types of products. Targeting marketing to contractors means that more customers get information about C&I at the time that they are considering investments. Provision of material and training sessions to staff at the local Chamber of Commerce, the Kingston Economic Development Corporation, and trade organizations such as the Kingston Construction Association will ensure that new or expanding businesses or developers are aware of New Construction incentives. Efforts in these channels will be complimented by making OPA Education and Capacity Building offerings available locally.

4.5.4.3 Consumer Programs

Kingston Hydro will offer a full suite of consumer programs, supported by the OPA. These programs will include the Appliance Retirement/Exchange Program, Instant Discounts, HVAC rebates, Peaksaver with demand response (no option offered without demand response), Midstream Incentives, Enabling Tools, and Capacity Building. This suite of programs will be highly centralized, and mass marketed by the Ontario Power Authority. Kingston Hydro will likely sub-contract actual program delivery or rely on province-wide dispatch as with the existing appliance roundup program. It is expected that marketing and administrative costs, such as training Customer Service Representatives, will form the bulk of the consumer program budget. For a list of the Consumer Programs Kingston Hydro will offer throughout the target period, please refer to Section 5.

In 2011, there will be a focus on in-house training of Utilities Kingston's Customer Service Representatives, developing the Consumer Program value chain, testing local marketing approaches for effectiveness, and expanding community marketing partnerships such as those undertaken with "Join the Journey" or other youth-oriented, event and door to door marketing initiatives. Low Income programming will either be adopted from the OPA or developed as a board approved program in 2011.

Since Kingston Hydro's CDM Officer will also oversee Utilities Kingston water and natural gas conservation portfolios, Kingston Hydro customers will see a unique integration of conservation education, marketing, and customer service activities.

Kingston Hydro will be able to reach customers interested in many different types of conservation with information about electricity programs.

Consumer Programs will absorb a disproportionately high allocation of the annual marketing and administration budgets, and will likely form the least cost effective CDM efforts per kW and kWh. However, building awareness within the community can support efforts to implement electricity efficiency efforts in the workplace, and is necessary to create a culture of conservation within the Kingston community.

OPA contracted programs that will operate in 2011 include all programs listed in Section 5. Kingston Hydro will implement these programs in the same standardized manner as all other LDCs in the province. Kingston Hydro Staff may personally contact or hold events to educate retailers or installers who will be processing Instant Discounts, Midstream Incentives, and HVAC rebates to ensure that confusion between Kingston Hydro and Hydro One territories in Kingston is minimized, improve CDM results tracking, and deliver a simple, integrated CDM message to customers.

4.5.4.4 Industrial Programs

Because Kingston Hydro does not have large number of industrial customers such as those targeted by OPA Contracted Industrial programs, there will likely be no savings attributable to these programs in 2011. Work will be done to identify potential projects in this sector, develop relationships with industrial customers, and develop relationships with other LDCs in expectation of forming partnerships to apply for Roving Energy Manager funding.

4.5.4.5 General Marketing Notes

In 2011, Kingston Hydro will work with Utilities Kingston internal web-developers to expand its online resources to reflect the expansion in CDM programming. Marketing funds may be allocated from each CDM target period year to fund up-front development of standard marketing or online educational materials.

A key plank of the Kingston Hydro plan will be ensuring that capacity to handle volume is developed before conducting widespread marketing for any CDM program. 2011 will be a year where processes for implementation are developed and fine-tuned so that marketing in 2012, 2013 and 2014 can be more effective.

4.6 2012 CDM Strategy

4.6.1 Cumulative Peak Demand Reduction (MW):

6.5 MW, 74.3% of CDM Target

4.6.2 Cumulative Consumption Reduction (GWh):

17.7 GWh, 47.5% of CDM Target

4.6.3 2012 Kingston Hydro CDM Budget

Kingston Hydro 2012 CDM Programming Budget

		Budget Detail						
Program Portfolio	Portfolio Totals	CDM Officer	CDM Advisor/Subs	Technical & Administration	Vehicle, Travel, Education, Equipment	Non-Variable Marketing	Variable Marketing Costs	Other Sub-Contracted or Variable Costs
<i>Demand Response</i>	\$85,203	\$18,900	\$12,600	\$12,600	\$5,833	\$1,000	\$13,410	\$20,860
<i>ERIP</i>	\$158,393	\$18,900	\$33,600	\$12,600	\$5,833	\$7,000	\$17,880	\$62,580
<i>SCDI</i>	\$125,028	\$6,300	\$12,600	\$12,600	\$5,833	\$5,000	\$20,115	\$62,580
<i>Consumer</i>	\$173,808	\$12,600	\$25,200	\$12,600	\$5,833	\$17,000	\$37,995	\$62,580
<i>Low Income</i>	\$24,733	\$6,300		\$12,600	\$5,833	\$0	\$0	\$0
<i>OEB Approved</i>	\$5,833	\$0	\$0	\$0	\$5,833	\$0	\$0	\$0
Totals	\$572,998	<i>\$63,000</i>	<i>\$84,000</i>	<i>\$63,000</i>	<i>\$35,000</i>	<i>\$30,000</i>	<i>\$89,399</i>	<i>\$208,599</i>

Total OPA Funding Based on Projected Results	\$472,998
LESS - 2011 Non-Variable Budget	\$275,000
Variable Funding Available (OPA Forecast Based on projected results PLUS - Carry over from year 1 (one large customer DR skewing results))	\$197,998
Total Variable Funding 2011	\$297,998
Marketing Costs @ 30% of Variable Funding	\$89,399
Sub-Contracted or other Costs @ 70% of Variable Funding	\$208,599

Note - OPA LOW INCOME PROGRAM DESIGN NOT RELEASED AS OF STRATEGY FILING - Budget allocation to be made once program design finalized
Marketing Funds allocated to Consumer Programs as placeholder

4.6.4 OPA Program Strategy Notes

4.6.4.1 Demand Response (DR 1, DR 3)

Kingston Hydro will focus on accelerating and focusing DR efforts in 2012. With groundwork laid and awareness built in 2011, results in 2012 should be better than those achieved in the startup year. Established relationships with aggregators will allow increased uptake. Utilize backup generation will continue, with perhaps one or two generators registering for DR 1 or DR 3 in the second half of 2012.

Relationships with larger customers will continue and will start to generate results as multi-year or integrated efficiency plans develop. Templates for tracking or planning may be developed, and in the second half of the year Kingston Hydro resources will likely shift focus from planning and marketing to verification and measurement.

4.6.4.2 Commercial and Institutional Programs

Efforts in the areas of Direct Install Peaksaver, Lighting, and A/C will continue, with peak market penetration for lighting to be approached by the end of 2012. Operational and marketing protocol with Direct Install contractors will be well established by 2012, leading to increased operational efficiency.

Equipment replacement programs will begin to reach maturity, with a move from time spent developing operating procedures, marketing plans, and customer project plans towards claims processing, measurement, and verification projected for late 2012. It is foreseen that as prescriptive incentives are adjusted, there may be value in approaching previous ERIP customers to explore new opportunities created by changing incentives.

4.6.4.3 Consumer Programs

Consumer programs will evolve with the OPA Contracted Programs strategy. As with DR and C&I programs, planning and process development and internal training in 2011 will lead to increased capacity for realizing energy savings and increased marketing efforts in 2012 to build volume. Cost effectiveness should increase as well. Low Income Programming should be well established by 2012 and efforts on this front will be a focus during 2012 to drive results in the 2013-2014 timeframe.

4.6.4.4 Industrial Programs

See Commercial and Institutional Programs.

4.6.4.5 General Marketing Notes

Planning and process development in 2011 will be leveraged by increases in marketing efforts in 2012. 2012 and 2013 will see the bulk of Kingston Hydro's CDM results.

4.6.5 Ontario Energy Board Approved Programs

Refer to Section 6.

4.7 2013 CDM Strategy

4.7.1 Cumulative Peak Demand Reduction (MW)

7.85 MW, 118.5% of CDM Target

4.7.2 Cumulative Consumption Reduction (GWh)

32 GWh, 85.8% of CDM Target

4.7.3 2013 Kingston Hydro CDM Budget

Program Portfolio	Portfolio Totals	Budget Detail						
		CDM Officer	CDM Advisor/Subs	Technical & Administration	Vehicle, Travel, Education, Equipment	Non-Variable Marketing	Variable Marketing Costs	Other Sub-Contracted or Variable Costs
<i>Demand Response</i>	\$88,504	\$18,900	\$12,600	\$12,600	\$5,833	\$1,000	\$14,702	\$22,869
<i>ERIP</i>	\$166,144	\$18,900	\$33,600	\$12,600	\$5,833	\$7,000	\$19,602	\$68,608
<i>SCDI</i>	\$132,994	\$6,300	\$12,600	\$12,600	\$5,833	\$5,000	\$22,053	\$68,608
<i>Consumer</i>	\$183,496	\$12,600	\$25,200	\$12,600	\$5,833	\$17,000	\$41,655	\$68,608
<i>Low Income</i>	\$24,733	\$6,300		\$12,600	\$5,833	\$0	\$0	\$0
<i>OEB Approved</i>	\$5,833	\$0	\$0	\$0	\$5,833	\$0	\$0	\$0
Totals	\$601,705	\$63,000	\$84,000	\$63,000	\$35,000	\$30,000	\$98,012	\$228,694

Total OPA Funding Based on Projected Results	\$501,705
LESS - 2011 Non-Variable Budget	\$275,000
Variable Funding Available (OPA Forecast Based on projected results	\$226,705
PLUS - Carry over from year 1 (one large customer DR skewing results)	\$100,000
Total Variable Funding 2011	\$326,705
Marketing Costs @ 30% of Variable Funding	\$98,012
Sub-Contracted or other Costs @ 70% of Variable Funding	\$228,694

Note - OPA LOW INCOME PROGRAM DESIGN NOT RELEASED AS OF STRATEGY FILING - Budget allocation to be made once program design finalized
Marketing Funds allocated to Consumer Programs as placeholder

4.7.4 OPA Program Strategy Notes

OPA program delivery strategy will focus on similar areas as those mentioned in 2012 Strategy Notes. As 2013 draws to a close, increased market penetration will mean that existing programs may see decreased uptake or cost effectiveness. By this time, Kingston Hydro will have a good indication as to whether it will be able to meet 2011-2014 targets with its portfolio of OPA Contracted Programs. Increased focus on OEB Approved Programs will be seen if targets cannot be met through Kingston Hydro's initial CDM Strategy.

4.7.5 Ontario Energy Board Approved Programs

Refer to Section 6.

4.8 2014 CDM Strategy

4.8.1 Cumulative Peak Demand Reduction (MW):

8.75 MW, 132% of CDM Target

4.8.2 Cumulative Consumption Reduction (GWh):

37.2 GWh, 100.75% of CDM Target

4.8.3 2014 Kingston Hydro CDM Budget

		Budget Detail						
Program Portfolio	Portfolio Totals	CDM Officer	CDM Advisor/Subs	Technical & Administration	Vehicle, Travel, Education, Equipment	Non-Variable Marketing	Variable Marketing Costs	Other Sub-Contracted or Variable Costs
<i>Demand Response</i>	\$60,232	\$18,900	\$12,600	\$12,600	\$5,833	\$1,000	\$3,639	\$5,660
<i>ERIP</i>	\$99,764	\$18,900	\$33,600	\$12,600	\$5,833	\$7,000	\$4,851	\$16,980
<i>SCDI</i>	\$64,771	\$6,300	\$12,600	\$12,600	\$5,833	\$5,000	\$5,458	\$16,980
<i>Consumer</i>	\$100,522	\$12,600	\$25,200	\$12,600	\$5,833	\$17,000	\$10,309	\$16,980
<i>Low Income</i>	\$24,733	\$6,300		\$12,600	\$5,833	\$0	\$0	\$0
<i>OEB Approved</i>	\$5,833	\$0	\$0	\$0	\$5,833	\$0	\$0	\$0
Totals	\$355,856	\$63,000	\$84,000	\$63,000	\$35,000	\$30,000	\$24,257	\$56,599

Total OPA Funding Based on Projected Results	\$255,856
LESS - 2011 Non-Variable Budget	\$275,000
Variable Funding Available (OPA Forecast Based on projected results	-\$19,144
PLUS - Carry over from year 1 (one large customer DR skewing results)	\$100,000
Total Variable Funding 2011	\$80,856
Marketing Costs @ 30% of Variable Funding	\$24,257
Sub-Contracted or other Costs @ 70% of Variable Funding	\$56,599

Note - OPA LOW INCOME PROGRAM DESIGN NOT RELEASED AS OF STRATEGY FILING - Budget allocation to be made once program design finalized
Marketing Funds allocated to Consumer Programs as placeholder

4.8.4 OPA Program Strategy Notes

4.8.4.1 Demand Response (DR 1, DR 3)

If Kingston Hydro is able to meet its DR targets in 2013 as forecast, it will concentrate on finding additional DR opportunities, reporting to the OEB to ensure timely CDM incentive payments to Kingston Hydro. Efforts for DR will tail off significantly if projected results are met before 2014. Due to the increased incentives for over-achieving, and Kingston Hydro's likely over-achievement in DR, resources devoted to consumption savings may be re-directed to facilitating increased demand response once consumption targets are met.

4.8.4.2 Commercial and Institutional Programs

With 2012 and 2013 delivering the bulk of Kingston Hydro's C&I savings, direct install and equipment replacement program portfolios will likely see a drop in participation due to market saturation. Resources related to measurement and verification along with claims processing and 2011-2014 CDM Target Reporting will need to increase. It is foreseen that many of the multi-year CDM projects at institutions will be processed and completed in this timeframe.

Unless new items are made available under Direct Install programs, it is foreseen that there will be a significant decline in participation and results as market saturation for these programs will have been achieved.

4.8.4.3 Consumer Programs

Consumer programs will continue to evolve as OPA Contracted options change to address market saturation for certain initiatives.

4.8.4.4 Industrial Programs

Included within the C&I program portfolio.

4.8.5 Ontario Energy Board Approved Programs

Refer to Section 6.

5 OPA-Contracted Province-Wide CDM Programs

Descriptions of OPA Contracted Programs in this document are taken from the Ontario Power Authority's Program Summary Guides published in October 2010.

Kingston Hydro intends to engage in the following OPA Contracted Province-Wide CDM Programs in its efforts to meet and exceed 2011-2014 Provincially-mandated CDM targets:

5.1 Consumer Programs

5.1.1 Appliance Retirement/Exchange

This initiative is a carry forward and enhancement of the Great Refrigerator Roundup. It includes free pick-up and decommissioning of old, inefficient, working, appliances:

- Refrigerators that are at least 15 years old in 2011 and 2012 and 20 years old in 2013 and 2014
- Freezers that are at least 15 years old in 2011 and 2012 and 20 years old in 2013 and 2014
- Room air conditioners (only picked up if a refrigerator/freezer is also scheduled to be picked up at the same time)
- Dehumidifiers (only picked up if a refrigerator/freezer is also scheduled to be picked up at the same time)

There is also opportunity to integrate municipal appliance pick-up services (where available).

LDCs may engage municipalities to see if local appliance collection programs can be integrated and the OPA will arrange for appliances that meet the Program eligibility criteria to be picked-up and decommissioned. The process through which to formalize this arrangement will be provided at a later date.

The OPA will also work with retailers to arrange for the decommissioning of eligible appliances upon the replacement of new, the age requirements will be consistent with those identified above. The Exchange Events portion of the Program is a carry forward and enhancement of exchange events previously hosted by retailers. It includes exchange events held bi-annually at participating retailers for room air conditioners and dehumidifiers. The spring exchange event will feature a \$50 coupon toward the purchase of a high efficiency replacement unit; the fall event will feature a \$25 gift card.

The initiative will also include local marketing and may include engagement opportunities for LDCs where LDCs can negotiate them locally. Savings from the Exchange Events will be proportionally allocated to LDCs based on the size of their residential customer base.

5.1.2 Instant Discounts (Rebates)

This is a carry forward of the Power Savings Event with some enhancements. It will now include year round coupons and bi-annual in-store instant discounts (Rebates). LDCs will conduct local marketing; as well there may be opportunities for possible LDC in-store presence in participating retailers throughout their community where LDCs negotiate independently with the local retailer.

For year round coupons, measures will be traceable to the LDC service territory via a coding mechanism that will be found on the coupons. For the bi-annual events, savings will be proportionally allocated to LDCs based on the size of their residential customer base. A Conservation Discount Card is being developed in collaboration with the Consumer Working Group as a replacement for coupons. Further information on the Conservation Discount Card will be provided when available.

5.1.3 HVAC Discounts (Rebates)

This is a carry forward of the existing Cool Savings Rebate initiative with some enhancements. LDCs will be included in recruitment of contractors, supported by OPA recruitment efforts. The HVAC rebates will be delivered to consumers through participating contractors and will be centrally fulfilled by the OPA. It will also feature local marketing and engagement opportunities for LDCs. Capability building is also part of this initiative, as the OPA will make training available for contractors to educate them on quality installation principles.

5.1.4 Demand Response

This is a re-design of peaksaver[®], the residential demand response initiative. Existing program features will continue to be offered through June 30, 2011 pursuant to existing agreements between the OPA and participating LDCs. The OPA and the Residential Demand Response Work Group are currently conducting pilot projects to test new technologies for use in the future province wide residential demand response initiative with an anticipated start of July 1, 2011. Further details will be provided at the conclusion of pilot in December 2010. The initiative has been designed to include two options available to consumers – Kingston Hydro will only be participating in Option A.

- **Option A: Participation with Demand Response**

Under this option, four end-uses will be eligible for load control participation:

- central air conditioners
- electric water heaters
- room air conditioners
- pool pumps

Participants will get load control devices (Home Energy Interface (HEI)) installed free and they will have access to real time consumption and price information. This information can be accessed on an in-home device (IHD) or on-line, depending on the customer's choice. When developed, a Dashboard will also be available under Option A. A Dashboard is a single device that includes load control capabilities and IHD. Consumers will receive subsidized Dashboards.

5.1.5 Mid-Stream Incentives

This is a carry over and enhancement of the midstream television incentive from the Power Savings Event. In addition to providing incentives for retailers to promote energy efficient televisions, it will include incentives for satellite and cable providers to use high-efficiency set-top boxes and network configurations. It will also include pool pumps, providing contractors

with incentives to install “right sized” pool equipment. Savings from midstream initiatives will be proportionally allocated to LDCs based on the size of their residential customer base.

5.1.6 Enabling Tools

In addition to the specific Initiatives, another important feature of the Programs is Enabling Tools aimed at consumers and industry.

- **Consumer-focused Enabling Tools**

Education

- Web-based material
- Information integrated into marketing materials
- Cross-promotion of initiatives

Audit Tool

- New, on-line home audit tool that examines energy use, including electricity and gas
- Tool will have robust education component
- LDCs will be able to host the audit tool on their website through an interface

- **Industry-focused Enabling Tools**

HVAC Quality Installation

- When installing rebated HVAC measures, quality installation metrics will be required
- Opportunities for a quality installation certification program will be investigated, including the possible provision of incentives for industry training Mid-stream
- Cross-promoting of initiatives whenever there is an interaction with the consumer

5.1.7 Capability Building

The Program includes a number of supply chain capability initiatives.

- **HVAC Contractor Capability Building**

This focuses on quality installation in the HVAC industry to ensure the efficiency designed into products are not jeopardized by the installation. This will be achieved by:

- implementing a quality installation standard
- a training program for existing technicians
- influencing apprenticeship and journeyman training

- **Builder Training**

This training will focus on “building in” energy efficiency and green attributes to new homes. Currently 15-20% of the builders already build to higher levels of energy efficiency but the aim is to increase the penetration beyond the 20%.

5.1.8 Marketing

A province-wide marketing strategy will provide an integrated campaign for all sectors tailored to the appropriate marketing vehicle. The marketing approach will evolve from fragmented

program advertising to a customer-centric strategy that moves the focus from the end-use to the end-user.

A new conservation icon (Trustmark) is being developed and will be consistently embedded in all conservation messaging with the aim of becoming a “seal of trust and approval” for consumers and businesses alike. The OPA will provide province-wide air cover to support the LDCs in delivery of the Program. The OPA will also provide LDCs with a versatile marketing toolkit for development of local marketing materials (bill inserts, posters, website content, call center transcripts, etc.). As well, there will be a central website that will present the province-wide programs. The figure below depicts the customer-centric perspective of the conservation universe.

LDCs will take the central role in managing the relationship with their customers so LDCs will decide how much marketing is needed to deliver certain elements of the province-wide programs and will have to manage all local marketing tools, subject to marketing guidelines established by the OPA.

5.1.9 Low-Income CDM Programs

Kingston Hydro looks forward to participating in OPA Contracted Low-Income CDM programs once the design of these programs is completed by the OPA.

5.2 Commercial and Industrial Programs

For detailed descriptions of OPA Contracted Commercial and Industrial Programs, visit:

<https://icon.powerauthority.on.ca>

5.2.1 Direct Installed Lighting and Direct Serviced Space Cooling

The Direct Installed Lighting initiative targets customers in the General Service <50kW account category. Participation for the existing version of this initiative, the Power Savings Blitz, has been very high. In addition to offering eligible customers up to \$1,000 in equipment upgrades at no charge, standard prescriptive incentives will now be available for eligible equipment beyond the initial \$1,000 limit. There will also be a similar initiative for servicing of space cooling equipment.

Customers can participate in this initiative one of three ways:

1. Door-to-door approach: An LDC representative, Assessor or Lighting Contractor would visit potential participants and, where the customer is determined to be eligible for the component, the assessment would proceed directly or be scheduled. This is the approach commonly used for the Power Savings Blitz.
2. Self-selection approach: Through the new on-line registration system (iCon), by creating a user profile for this Program and choosing to apply for this initiative. Upon submission the application would be forwarded to the LDC that services the customer’s business location as determined by postal code. The LDC would instruct a service provider (i.e., an Assessor or Lighting Contractor) to contact the customer to schedule an on-site assessment.
3. Referral approach: In connection with the Direct Serviced Space Cooling initiative, an LDC representative, Assessor, or HVAC Contractor may identify an opportunity for a customer to participate in the Direct Installed Lighting initiative. Should the customer desire to

participate, the customer would proceed as per either the self selection approach or the door-to-door approach.

New mandatory QA/QC procedures and protocols will be provided to validate the work being performed against the eligibility requirements of the initiative and the participant incentives being paid; and as well to ensure that corrective actions are being taken where potential issues are identified.

A customer can qualify for Direct Installed Lighting incentives for a given building or premises only once during the Program period (through December 31, 2014). The customer can, however, take advantage of other Program initiatives including Equipment Replacement incentives (assuming they satisfy the criteria for the other initiative(s)) with regard to the particular building or premises.

The Direct Serviced Space Cooling initiative is available to customers with roof-top or ground-mounted air conditioning systems with a capacity of 25 tons or less. The initiative is intended to target the same customer base as the Direct Install Lighting initiative, although in some cases customers in the General Service >50 kW account category will also be eligible. Basing the eligibility criteria on air conditioner size is intended to simplify the determination of possible participants by HVAC Contractors. This initiative provides for up to \$750 of services and labour to service the customer's air-conditioning unit(s). Customers participate in this initiative as per the Direct Installed Lighting initiative.

5.2.2 Demand Response

This is a re-design of peaksaver[®], the residential demand response initiative. Existing program features will continue to be offered through June 30, 2011 pursuant to existing agreements between the OPA and participating LDCs. The OPA and the Residential Demand Response Working Group are currently conducting pilot projects to test new technologies for use in the C&I Program with an anticipated start date of July 1, 2011.

Further details will be provided at the conclusion of the pilot in December 2010.

The new Residential and Small Commercial Demand Response initiative has been designed to include two options available for small business customers – Kingston Hydro will only be participating in Option A.

- **Option A:** Participation with Demand Response – under this option, only central air conditioning systems will be eligible for load control participation. (For residential customers, other equipment will also be eligible.) Participants will get load control devices (identical to the Home Energy Interface (HEI) devices for residential customers) installed at no charge and they will have access to real time consumption and price information. This information can be accessed on an in-home/on-premises device (IHD) or on-line, depending on the customer's choice. When developed, a Dashboard will also be available under Option A. A Dashboard is a single device that includes load control capabilities and IHD. Customers choosing this option will receive subsidized Dashboards.

5.2.3 Equipment Replacement

Equipment replacement projects have traditionally been categorized in ERIP and other similar programs as either Prescriptive or Custom. The Prescriptive approach utilizes a list of specific

measures for which the incentive is prescribed. The Custom approach requires a more sophisticated, and in some cases complex process to determine the potential for demand reductions or energy savings. The Program will continue these two approaches, but will also include an Engineered approach.

The Engineered approach will provide the customer with potential for additional incentives for the equipment to be installed and will provide a more straight-forward process than the Custom approach, with simplified calculations of energy and demand savings. The incentives available under the Engineered approach are the same as for the Custom approach, but the actual amount would be based on data provided by the customer, including:

- a description of the equipment being replaced,
- a description of the new equipment,
- disposal costs of old equipment,
- the operating schedule (days per week, hours per day, time of day), and
- the cost of the new equipment.

Participant incentives for prescriptive projects are as per the prescriptive forms/worksheets which specify the dollar amount per unit installed, with no maximum amount payable for the project. Incentives for Engineered and Custom projects are:

- \$400/kW or \$0.05/kWh for lighting measures (whichever is higher) to a maximum of 50% of the project costs.
- \$800/kW or \$0.10/kWh for non-lighting measures (whichever is higher) including lighting controls to a maximum of 50% of the project costs.

Customers can participate in this initiative by creating a user profile for the C&I Program through iCon and applying for the Equipment Replacement Incentive initiative. In connection with the application the customer must complete the appropriate Prescriptive, Engineered and/or Custom forms/worksheets. The customer has the option of assigning a representative such as an electrical contractor to complete the application process on their behalf. Where the customer does not have access to iCon, there is a process by which applications can be submitted in paper form. Upon submission, the application is forwarded to the LDC that services the customer's business location as determined by the postal code. QA/QC procedures and protocols will be provided to validate the compliance of the project with the eligibility requirements for the initiative. In addition, M&V guidelines for custom projects will be included to assist and standardize the assessment of savings from these projects. The rigour required for M&V studies of custom projects will be in proportion to the size and complexity of the project.

5.2.4 Existing Building Commissioning

Any customer in the General Service >50 kW or Large User account categories with single buildings/premises greater than 50,000 square feet in size and with chilled water plants will be eligible to participate in the Existing Building Commissioning initiative of the Program.

The services that would qualify include:

- the development of a plan for commissioning activities,

- the procurement of devices and/or software associated with commissioning activities and
- third party services for building commissioning.

A building owner participates in this initiative by hiring a Commissioning Agent, who must provide two references from past projects OR be certified (by the AEE, ASHRAE or BCA). The Commissioning Agent would undertake a commissioning project by performing the following stages:

1. Scoping Study: A comprehensive plan for the commissioning project is developed.
2. Investigation Phase: A report summarizing commissioning activities associated with both low cost/no cost opportunities and major retrofit activities is prepared. As a condition of participation in this phase, the customer must agree to undertake all recommendations made with payback periods of two years or less.
3. Implementation Phase: Where an implementation plan involves multiple discrete stages, a summary report detailing the results achieved during that stage is prepared.
4. Hand-off/Completion Phase: A final report detailing the final results achieved including confirmation and description of the training and documentation that was provided to building operators and contractors is prepared.

The participant incentives available for each of the four stages are:

- Scoping Study: The actual amount charged by the Commissioning Agent, to a maximum of \$2,500.
- Investigation Phase: As a condition of proceeding to this Phase, the customer must agree to undertake any opportunities identified as “low cost/no cost” with payback periods of less than two years. incentives for this phase are:
 - \$18 per ton of cooling for engineering services, to a maximum of 75% of the costs for these services.
 - \$6 per ton of cooling for required metering hardware and software configuration, to a maximum of 75% of the costs for this equipment and associated service.
 - The total incentive available for this Phase is a maximum of \$50,000.
- Implementation Phase:
 - Participants will be eligible for incentives for projects with paybacks greater than two years. These projects will be treated similar to Custom projects in the Equipment Replacement initiative, except that the incentives payable will be calculated to only pay down to the lesser of the two-year payback threshold or 50% of the project cost.
 - The incentives will be calculated using a rate of \$800/kW or \$0.10/kWh (whichever is higher).
- Hand-Off/Completion Phase: The actual amount charged by the Commissioning Agent, to a maximum of \$2,500.

Customers can participate in this initiative by creating a user profile for the C&I Program through iCon and applying for the Existing Building Commissioning initiative. The customer has the option of assigning a representative such as the Commissioning Agent to complete the

application process on their behalf. Where the customer does not have access to iCon, there is a process by which applications can be submitted in paper form. Upon submission, the application is forwarded to the LDC that services the customer's business location as determined by the postal code.

Customers can qualify for Existing Building Commissioning incentives only once for the same building or premises during the Program period (through December 31, 2014). M&V guidelines for this initiative are as per the requirements of Custom projects under the Equipment Replacement initiative.

5.2.5 New Construction – All Buildings and Customer Types

The New Construction initiative of the C&I Program will provide incentives for new buildings to exceed existing codes and standards for energy efficiency. Similar to the Equipment Replacement initiative, the New Construction initiative utilizes both Prescriptive and Custom approaches.

Participant incentives for prescriptive projects are as per the prescriptive forms/worksheets, which specify the kW and kWh assumption per unit installed, and determine the resulting incentive at a rate of \$250/ kW. For new multi-family buildings, incentives for appliances are determined on a dollar amount per unit installed. Incentives for Custom will depend on the level of savings achieved, to a maximum of 50% of the project cost. In addition, there are incentives for building modeling to maximum of \$10,000; as well as incentives for Design Decision-Makers (e.g. designers, architects and engineers) that were involved in the building design.

Customers can participate in this initiative by creating a user profile for the C&I Program through iCon and applying for the New Construction initiative. The customer has the option of assigning a representative such as the Design Decision-Maker to complete the application process on their behalf. Where the customer does not have access to iCon, there is a process by which applications can be submitted in paper form. Upon submission, the application is forwarded to the LDC that services the customer's business location as determined by the postal code.

5.2.6 Demand Response 1 (DR 1)

Demand Response 1 (DR 1) is an initiative where distribution-connected electricity customers voluntarily provide DR capability to reduce system peak demand and increase system reliability. Both LDC's and Aggregators will be eligible to register participants for this initiative. Key initiative elements include:

- Participants contract through their LDC or Aggregator for a specific amount of demand response capacity.
- Participants must be on stand-by 1600 hours/year, generally between 12 noon and 6 pm on business days.
- Participants are activated up to 100 hours/year by the IESO when there is a system need.
- There is no obligation for a Participant to participate when called upon by the IESO. If the Participant wishes to participate in the activation they submit a Confirmation to the IESO.
- During any activation, Participants can offer up to 100% of their registered DR capacity.

Two payments are made to Participants:

1. Availability Payment – capacity, and
2. Utilization Payment – energy.

Rates:

Availability Rates: \$4,000 per MW of weighted average DR provided over all activation periods in summer months (i.e., June through September) where at least one Activation occurs, and \$2,000 per MW of weighted average DR provided over all activation periods in non-summer months where at least one Activation occurs, plus;

Utilization Rates: of HOEP up to \$170 per MWh for all load reduction delivered as part of the DR actually provided.

Local discounts will apply to rates for some areas of Ontario. Payments are made monthly based upon performance relative to a baseline calculation. DR 1 will be available to customers with peak demand of 50kW or more that have a minimum hourly interval meter. Typical DR customers include office buildings and universities and have:

- self-generation or stand-by generation capability with appropriate certificate of approval from the Ministry of Environment that allows for participation in DR. This typically, but not always, excludes diesel;
- load that can be turned off for four hours at a time; or
- production load that can be shifted away from curtailment hours.

5.2.7 Demand Response 3 (DR 3)

Demand Response 3 (DR 3) is an initiative for distribution-connected electricity customers to provide DR capability to mandatorily reduce system peak demand and increase system reliability. The OPA will enter into contracts with the Aggregators or directly with Participants providing DR capacity of greater than 5MW.

Key initiative elements include:

- The Aggregators will contract directly with Participants with load less than or equal to 5MW to provide DR.
- The Aggregators will contract with the Participants with whom they will register with the OPA.
- Participants must be on stand-by approximately 1600 hours/year. The standby period can be either 12 noon to 6 pm business days during summer months (i.e., June through September), and 4 pm to 9 pm business days for all non-summer months; or 12 noon to 9 pm on business days for all months during the year.
- Participants will be activated either up to 100 hours/year or 200 hours/year by the Aggregator, in response to a notice from the IESO to the Aggregator when there is a system need.

- There is an obligation for a Participant to participate when called upon by the Aggregator. Failure to participate when called may result in a financial penalty being issued against the Aggregator or Participant.

Two payments are made to Participants:

1. Availability Payment – capacity, and
2. Utilization Payment – energy.

Rates: Available payments to customers for their demand response capability will be dependent on the offering made available by an Aggregator. However, all Aggregators are paid the same rate from the OPA. These rates vary depending on location of the site within Ontario, and term of the agreement between the OPA and an Aggregator. Rates are posted on the OPA web site.

Availability Rates are applied to the Demand Response capability registered and payments are made each month of the year, regardless of activation.

Utilization Rates are made for all load reduction delivered during an activation. Local discounts of 50% will apply to rates for some areas of Ontario. All payments will be based upon performance relative to a baseline calculation. DR 3 will be available to customers with peak demand of 50kW or more that have interval meters supported by recorders with 5 minute interval capability. Typical DR 3 customers will have:

- self-generation or stand-by generation with appropriate certificate of approval from the Ministry of Environment that allow for participation in DR. This typically, but not always, excludes diesel;
- load that can be turned off for four hours at a time; or
- production load that can be shifted away from curtailment hours.

5.2.8 Capability Building

The C&I Program will offer the following three types of capability building activities:

1. **Training and Certification** – the Program will include the following:
 - Building Operator Training – training and certification focusing on operational energy efficiency opportunities.
 - Commissioning – training and certification of qualified agents to provide commissioning services to building owners.
 - Energy Manager Training – training and certification of qualified agents to provide expertise/advice for energy efficiency opportunities.
 - Integrated Energy Efficient Design Facilitator – training and certification of qualified agents to provide energy efficiency design services for new buildings.
2. **Energy Efficiency Solutions Provider** – the Program will provide shared services for the institutional sector to increase awareness and uptake of the CDM programs.

3. **Education** – the Program will include incentives for tenant education for residents of multi-family buildings (mixed use buildings included) with respect to in-suite energy efficiency and demand response opportunities. The specifics for tenant education incentives are under development in connection with the Low Income Single Family Homes Program.

6 Potential Ontario Energy Board Approved Programs

6.1 Ontario Energy Board Approved Program Strategy

At the time of preparation of this strategy, OPA final program design and funding formulae have not been released, there have been no tests of the Ontario Energy Board's criteria for board approved programs, and Kingston Hydro's Rate Application request to fund a full time equivalent conservation officer position has not been adjudicated. This makes it very difficult to plot an aggressive or innovative strategy for conservation programming including OEB Approved programs at the current time. As such, Kingston Hydro will focus on implementing OPA programs it has had success with in the past, while searching for opportunities or gaps in its CDM strategy, waiting for the regulatory and funding landscape to develop clarity before undertaking Board Approved program submissions.

It is intended that Board Approved programs will satisfy any portion of Kingston Hydro's CDM targets that cannot be reached through implementation of OPA Contracted Programs. Budgets for potential Board Approved programs to be undertaken by Kingston Hydro during the 2011-2014 target period will be filed at the latest within its first required Annual CDM Report to the OEB.

6.2 Potential OEB Approved Programs

6.2.1 Bill Presentment – Peer to Peer comparisons

Kingston Hydro may investigate the opportunity of providing its customers direct comparisons with other customers who have similar demographic characteristics and similar homes. OPower in California has demonstrated a 3% decrease in residential electricity consumption over baseline since instituting a program showing how individual consumers' electricity consumption compares to green champions, average consumers, and energy hogs in their neighbourhood. Data will only be aggregate to protect the privacy of individual customers. Education resources targeted to consumers based on their Utilities Kingston billing profile (fuel sources, etc.) could also be part of this initiative.

6.2.2 Student and Landlord Initiative

Innovative approaches to student housing could be taken in Kingston. Student housing is a very large proportion the building stock in Kingston Hydro's territory. Student housing tends to be some of the most poorly maintained building stock, and with many students living away from home for the first time, it represents a very fertile opportunity for electricity savings from both retrofits and behavioral change. Students can be key partners in electricity conservation efforts – Kingston Hydro will work with Queen's and St. Lawrence College to develop engagement programs and track electricity savings related the behavioral changes – changes that can lead to energy savings with high persistence as students of today become the consumers and decision makers of tomorrow.

6.2.3 Fuel Switching – Coop with gas utility

This initiative will focus on replacing electric appliances with natural gas appliances. This program may link with existing OPA programs, but will feature incentives to make connection to natural gas and fuel switching from electric appliances more attractive. Collaboration and combination of incentives with Utilities Kingston could significantly increase penetration of natural gas water heaters and air conditioners. Considering that the marginal peak electricity

source in Ontario is Natural Gas, substituting much more efficient on-site use of natural gas conserves this fossil fuel resource while taking loads off the electricity system.

Extensions of this program may include installation of gas fireplaces in place of electric baseboard heat, especially in combination with low-income direct install programs.

7 Program Mix

Kingston Hydro intends to offer CDM programs to all of its customer types. The following is a customer type analysis that has informed the selection of OPA Contracted Programs in line with the characteristics of Kingston Hydro's customer types. Unmetered Scattered Load customers will be covered by Commercial and Institutional CDM programs.

7.1 Residential Customer Analysis

In Kingston, residences are rented at a much higher rate and apartment buildings are much smaller in size and more widely held than the provincial average, making it more costly and difficult to reach landlords while limiting economies of scale for retrofit projects. Kingston regularly has one of Canada's lowest housing vacancy rates, meaning that Kingston landlords can be profitable even when offering units that are not energy efficient. As one of Canada's oldest cities, much of Kingston's housing stock is old and difficult to retrofit. Finally, Kingston Hydro's population is notoriously transient, with significantly higher rates of individuals staying in their residences for less than 3 years, making longer-term deep electricity retrofits uneconomic for many residents.⁴

Analysis of Kingston Hydro's residential customer profile provided by the Ontario Power Authority⁵ reveals significant challenges to consider when developing a strategy for Consumer (i.e. household / residential) CDM programs. Household decision makers are under 25 or over 65 at a considerably higher rate than the provincial average, and average household incomes are nearly \$14,000 per year below the provincial average, despite housing costs that track provincial norms. This means that financial capacity for energy retrofit projects is lower than that of other jurisdictions. This also means that Kingston Hydro may have a higher occurrence of common structural and social challenges faced by many utilities, governments, and social agencies in facilitating conservation within lower income segments.

Higher than average investment may be required to generate residential electricity efficiency gains; however, the demographics outlined above make Kingston an ideal location for early adoption of Low-Income Electricity Efficiency Programs. Thousands of Kingston Hydro customers are students at Queen's University and St. Lawrence College, living in off campus housing. Leveraging student groups and experienced social agencies to assist in reaching the traditionally tough-to reach low-income rental and youth segments could result in significant savings, especially since this type of housing is typically older in construction, electrically heated, more sensitive to electricity price changes, and not likely to have been early adopters of previous CDM programs. It is probable that direct-install type programs for these customers will be most effective. Kingston Hydro will focus on developing comprehensive low-income and rental property direct install programs while offering a standard suite of residential conservation programs.

⁴ See Exhibit 1, Kingston Hydro – Selected Statistics: Residential Profile

⁵ Kingston Hydro - Statistics.xlsx

7.2 Commercial and Institutional Customer Analysis

Kingston's commercial and industrial customers are much smaller and widely held than provincial averages. With most of Kingston's heavy industry located in the western, Hydro One serviced area of the City of Kingston, Kingston Hydro's customers typically either have more limited financial capacity than larger businesses, or they are owned by companies with headquarters outside of the community. In addition, with little heavy, daytime load industrial businesses than the average Ontario community, there is limited load dispatchability for demand response. Given the high age of Kingston Hydro serviced retail, office, and large multi-residential commercial customers, there may be opportunities for HVAC and lighting measures more in line with provincial averages.

Given the smaller size and retail or services nature of many of Kingston's commercial businesses, direct install programs will be most effective. Kingston Hydro's in-house energy conservation advisor should visit each participant in electricity conservation programs, and be able to identify ideal candidates for larger scale prescriptive, engineered, and custom energy efficiency equipment replacement programs. If past ERIP program participants are any indication, Kingston Hydro's ERIP-type applications are heavily weighted towards prescriptive CDM measures.

Kingston Hydro's best electricity consumption conservation opportunities exist within its many larger, institutional customers. Queen's University, Canadian Forces Base Kingston, Federal Prisons, St. Lawrence College, and a number of Hospitals, and Government campuses are Kingston Hydro's largest customers. Queen's University, St. Lawrence College, Hotel Dieu Hospital, and CFB Kingston have all undertaken multi-million dollar energy efficiency retrofit projects in the past 5 years. This is a double edged sword, because while significant capacity and awareness has been developed along with proof of the financial benefits of CDM investments, higher than provincial average marginal investment may be necessary to generate further electricity savings. If CDM targets are instituted for publicly funded institutions, this experience with CDM could prove to be valuable in seeking deeper electricity efficiency measures.

Kingston Hydro's energy consumption and demand is significantly lower in the summer, when an exodus of over 20,000 students from Queen's University, St. Lawrence College, and the Royal Military College occurs. This limits the ability of institutional customers to respond to demand at provincial peak times, as their loads are much smaller during the summer - generally already reduced to minimal levels in the normal course of operation. With the remainder of Kingston Hydro's institutional loads being hospitals, prisons, or military facilities with limited load dispatchability due to the nature of their operations, peak reduction CDM targets may be difficult to reach should Kingston Hydro not be able to facilitate higher than average amounts of demand response electrical generation.

Queen's University and Kingston General Hospital own a joint venture that has installed twin, 7.5 MW cogeneration facilities that have the capacity to provide significant heat and power to two of Kingston Hydro's largest customers while delivering surplus generation to the grid. Kingston Hydro was central to the development of this cogen facility, developing innovative connection design and financial settlement options to facilitate configuration of the generator in such a way that both significant load displacement and peak shaving is possible. With further efforts by Kingston Hydro to address system configuration, transfer trip, and heat loading constraints, this generator could be used to shave provincial peak with registration in Demand Response programs.

Many other Kingston institutions have large backup generators. If these generators can be switched from diesel to natural gas or be modified to meet demand response criteria, and the full 7.5 MW summer capacity of the Queen's co-generation facility can be harnessed, Kingston Hydro may be able to meet its peak demand reduction targets primarily through distributed local electricity generation.

Of note is that publicly funded institutions such as Kingston Hydro's largest customers are typically slow moving organizations. Combined with the fact that many of these institutions (education, prison, healthcare, and military) are undergoing large expansion projects, straining internal resources, CDM initiatives may be slow to develop. This however, is balanced by the ability of institutions to implement CDM initiatives regardless of macro-economic factors that may limit financial capacity in private corporations and the potential for publicly funded institutions to have their own CDM targets to meet. Kingston Hydro expects that this will mean the majority of persisting electricity consumption and peak savings will occur later in the target period, but should be average or better than average per large use and institutional customer compared to provincial averages.

As Kingston Hydro territory has a number of large institutions that may undertake comprehensive, multi-year conservation projects, care will have to be taken to ensure that any large lump-sum incentive payments that may occur are forecasted and allowed for by Kingston Hydro's finance team.

7.3 Industrial Customer Analysis

Heavy industry is not prevalent in Kingston Hydro's service territory. The few 44kV connected and/or GS<50kW interval metered customers that exist include a metal shredder and recycling facility whose demand and revenue is highly variable depending on market conditions, a commercial bakery, some large loads related to computer servers and IT, and Kingston Hydro affiliated, City-owned water and wastewater treatment and distribution facilities.

Kingston Hydro will work with these few customers to identify Industrial Conservation programs that suit their needs and capabilities. Of special focus will be water and wastewater facilities owned by the City of Kingston. Because their number is so small, their conservation contributions will be amalgamated with those of the Commercial and Institutional sector for the purposes of this Strategy, though it is acknowledged that Kingston Hydro may pursue dedicated Industrial Programs for certain customers in years 2 and 3 should demand exist.

8 CDM Programs Coordination

Kingston Hydro has the unique advantage of its relationship with affiliates Utilities Kingston and the City of Kingston. Utilities Kingston bills for water, wastewater, natural gas distribution, water heater appliance rental, and Kingston Hydro electricity distribution services on one bill to customers within Kingston Hydro territory. Utilities Kingston employs a Conservation and Demand Management Co-coordinator with responsibility for conservation programs for all affiliated utilities in Kingston.

There exists a unique opportunity to collaborate with the gas distribution business and the appliance rental business to facilitate fuel switching from electrically fueled appliances to gas-fired appliances such as water heaters and commercial air conditioners. This promotes the most efficient use of our fossil fuels, as it can directly offset the need to burn natural gas in “peaker” plants where heat is wasted and transmission and distribution losses occur before end use. In addition, facilitation of conversion to cleaner natural gas from diesel for Kingston’s many backup generators is aligned with Kingston Hydro’s Demand Response strategy, the interests of the gas utility, and the interests of the environment. Utilities Kingston’s appliance rental business makes installation of high efficiency solar and natural gas fuelled water heating systems more affordable. Kingston Hydro could work with Utilities Kingston to educate consumers about their non-electric water heating options.

Kingston Hydro leverages significant marketing and communications capacity through its relationship with the City of Kingston. By scaling up media buys through participation in the City-led procurement, and access to such trusted avenues of communication as the “City Pages”, City-issued press releases, and the municipal customer services representative team, Kingston Hydro will ensure that all Kingston residents and businesses are aware of CDM opportunities in its distribution territory. Marketing for CDM measures is much easier for a municipally owned utility such as Kingston Hydro, especially since the City of Kingston, Utilities Kingston and its affiliates are trusted, familiar, and accountable organizations to Kingstonians.

Utilities Kingston also manages the water and wastewater distribution and treatment network in Kingston, and as such is one of Kingston Hydro’s largest electricity load customers. By working with its affiliate to recognize electricity savings, Kingston Hydro can support more cost effective and efficient stewardship of water, while addressing nearly 40% of the Corporation of the City of Kingston’s electricity consumption. Kingston Hydro’s relationship with Utilities Kingston could be leveraged as individuals participating in Utilities Kingston’s water conservation programs can be educated about Kingston Hydro CDM programs. Individuals interested in water CDM are typically more receptive than average to electricity CDM offers. Gas, Electricity, and Water savings measures are often considered together in a portfolio of conservation investments for commercial and institutional sectors, and often have significant synergies if undertaken in an integrated manner. Kingston Hydro’s unique relationship with the gas and water providers in its distribution territory, and the implementation of its CDM strategy by Utilities Kingston’s inter-disciplinary CDM team will help customers make integrated, mutually re-enforcing CDM decisions.

Kingston Hydro’s affiliation with the City of Kingston will also help it manage low-income CDM programming more effectively. With social housing managers within the corporate family, Kingston Hydro has a uniquely close relationship with those agencies that support those who could benefit most from electricity CDM initiatives. Given that Utilities Kingston bills for sewer, water, gas, and electricity services with one bill, Kingston Hydro may be able to identify candidates for lower income programs more effectively and earlier than other utilities. Identifying low-income CDM program candidates before they fall behind on their electricity bills can ensure that those who stand to benefit most from electricity CDM still have capacity to invest their time and resources and see returns.

Before the OPA announced that it would be launching province-wide low income programs, Kingston Hydro CDM staff were in discussion with a number of social agencies including the Sisters of Providence, Hearthmakers Energy Coop, Social Housing Providers, and others to develop its own Low Income CDM initiative. Kingston Hydro had to drop out of active program development by this informal group once the OPA revealed its intention and the OEB released the CDM code prohibiting program duplication. It is expected that Kingston Hydro will re-engage with these agencies once the OPA Low Income Program Design is released to seek key implementation partnerships.