



ONTARIO POWER AUTHORITY



A Progress Report on Electricity Conservation

Second Quarter 2008

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Introduction

Ontario has a long-term conservation target to achieve 6,300 megawatts (MW) of peak electricity demand reduction by 2025. Interim targets include a reduction in peak demand of 1,350 MW by 2010. The OPA's approach in achieving the targets set for 2010 and 2025 is to use three overlapping but distinct type of conservation programs: resource acquisition, capability building and market transformation. This report focuses on resource acquisition or conservation procurement.

The OPA procures conservation resources in four different conservation categories. These categories are:

- **Energy efficiency:** using technologies that provide the same level of service but use less energy (e.g., compact fluorescent light bulbs)
- **Conservation behaviour/demand management:** reducing or shifting electricity demand (e.g., turning off lights, load shifting)
- **Fuel switching:** switching from electricity to another fuel for a given application (e.g., geothermal heat pumps)
- **Customer-based generation¹:** reduced demand for electricity from the grid due to on-site generation (e.g., solar photovoltaic panels)

The OPA uses a “portfolio approach” to ensure its wide-reaching slate of conservation programs provide comprehensive and cost-effective programs for Ontario. Some programs are designed to focus on energy efficiency and demand management, while others focus on only one aspect of conservation. The programs use tools as diverse as product rebates, building retrofits and direct installation services to encourage participants to undertake savings in one or more of the conservation categories. The table below identifies the number of programs scheduled to be running in each quarter of 2008. A more detailed schedule by program is provided in the appendix.

Table 1 – Conservation Portfolio Program In-Market Schedule

Program Sector	Quarter 1 January – March	Quarter 2 April – June	Quarter 3 July – September	Quarter 4 October – December
Mass Market Programs	2	5	7	9
Commercial/Institutional Programs	2	4	6	8
Industrial Programs	0	0	0	1
Demand Response Programs	3	3	3	4
Customer Based Generation Programs	1	1	1	2
Conservation/Technology Development Funds	2	2	2	2

¹ Combined heat and power projects (also referred to as cogeneration) less than or equal to 10 MW and renewable energy projects less than or equal to 500 kW are classified as conservation measures in that they offload the supply-side requirements of the power system at the provincial level.

About This Report

Progress reports are prepared quarterly to provide updates on the portfolio of electricity conservation initiatives managed by the OPA and their contribution toward achieving the 2010 target.

The OPA uses three different tracks to report on its conservation programs – forecasted, reported and verified savings. Each of these tracks provides estimates of energy and peak demand savings at different stages of conservation programs. As a result, each track has a different level of certainty associated with the results. The results provided in these quarterly progress reports are reported savings.

The reported savings² reflect the preliminary results of conservation programs and are calculated based on: (a) estimated energy savings per participant and other program input assumptions³ that were used to develop the program, and (b) reported participation activity. Reported savings reflect the success of program efforts in driving participation and can be used to gain early insights into a program's effectiveness. As part of its evaluation, measurement and verification (EM&V) framework, the OPA undertakes independent evaluation of its conservation programs to verify the energy savings and the program impact. Verified savings for 2008 programs will be available in 2009.

For detailed descriptions of reporting tracks, please refer to Ontario Power Authority's Conservation Reporting Methodology section in the appendix.

This report covers activities from April 1 - June 30, 2008.

² Unless otherwise noted, program activity units (participants, coupons, etc.) reported are gross results that capture 100 percent of program participants. Reported energy and demand savings are the estimated net results based on net-to-gross adjustments factors such as free-ridership. Free riders are program participants who would have undertaken the promoted conservation activity on their own initiative even without the program.

³ Assumptions include the energy-savings measure's effective useful life, the measure's seasonal energy-savings pattern and program free-ridership. These program input assumptions are estimated based on best available information during program design.

Portfolio Summary

Conservation program results are summarized below for the second quarter and 2008 year to date by sector.⁴ For demand response programs, the results are summarized below on a program-to-date basis. Sector-level program results and program highlights follow in subsequent sections.

Table 2 – Conservation Programs Results

Sector	# of Programs in Market	Net Summer Peak Demand Savings (MW)	First-Year Net Energy Savings (MWh)	Lifetime Net Energy Savings (MWh) ⁵
2008 Quarter 2				
Mass Market	5	3.0	12,043	131,611
Commercial/Institutional	4	4.4	8,837	176,748
Demand Response	3	30.1	0	0
Customer Based Generation	1	0.1	129	2,589
Total	13	37.6	21,009	310,948
2008 Year to Date				
Mass Market	5	6.6	19,650	231,705
Commercial/Institutional	4	11.0	28,669	339,113
Demand Response	3	38.6	0	0
Customer Based Generation	1	1.0	1,624	32,474
Total	13	57.2	49,943	603,292
2010 Program Portfolio Target⁶ (MW):		1,233		
Target Progress (%):		4.6		

Portfolio Summary

- **Mass Market Sector:** One existing and one revised program were implemented this quarter (Every Kilowatt Counts Power Savings Event and Summer Sweepstakes), bringing the number of mass-market sector programs in the market to five.
- **Commercial/Institutional Market Sector:** Two new programs were introduced in the second quarter (High Performance New Construction and Commercial Fuel Switching), bringing the number of commercial/institutional sector programs in the market to four.
- **Demand Response Programs:** *peaksaver*[®] and Demand Response 3 continued to increase capacity and are on track for activation according to their respective schedules.
- **Customer Based Generation:** Nineteen solar power project contracts were signed, and 14 projects reached commercial operation in the second quarter.

⁴ Quarterly results are sometimes adjusted after posting of the quarterly report. As such, readers should note that the year-to-date results in the current report may not always equal the year-to-date results from the previous report plus the current quarter's results. Readers are encouraged to always refer to the most recent quarterly report for the most up-to-date information.

⁵ Lifetime energy savings are the estimated total amount of energy that will be saved over the life of the specific conservation technology or action promoted in the program. For example, if a compact fluorescent light bulb saves 44 kilowatt-hours (kWh) per year and lasts for six years, it will save 264 kWh over its lifetime.

⁶ In addition to the 1,233 MW target for the portfolio of programs described in this report, the OPA will ensure the achievement of an additional 176 MW of conservation resources through the Smart Metering program, which is not included in these reports, for a total 2010 goal of 1,409 MW as set out in the Integrated Power System Plan.

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Mass Market Programs

In the second quarter of 2008, the OPA had five mass-market programs in the market, with another five under development for launch later in 2008. The quarterly and year-to-date results for these programs are summarized below. Complete descriptions of the programs are provided in the appendix.

Table 3 – Mass Market Sector Programs Results

Program	Activity Measure	Activity Units	Net Summer Peak Demand Savings (MW)	Net Energy Savings (MWh)	
				First year	Lifetime
2008 Quarter 2					
Great Refrigerator Roundup Program	Appliances	23,730	0.6	6,501	57,159
Cool Savings Rebate Program	Rebates	12,757	1.5	2,175	33,725
Aboriginal Pilot Program	Retrofits	0	0	0	0
Summer Sweepstakes	Customers	48,153	0.1	n/a	n/a
Every Kilowatt Counts Power Savings Event	Coupons	57,742	0.8	3,367	40,727
Total			3.0	12,043	131,611
2008 Year to Date					
Great Refrigerator Roundup Program	Appliances	32,894	0.9	8,998	79,061
Cool Savings Rebate Program	Rebates	41,257	4.8	7,285	111,917
Aboriginal Pilot Program	Retrofits	0	0	0	0
Summer Sweepstakes	Customers	48,153	0.1	n/a	n/a
Every Kilowatt Counts Power Savings Event	Coupons	57,742	0.8	3,367	40,727
Total			6.6	19,650	231,705

Mass Market Sector Summary

- **Great Refrigerator Roundup** – program activity has picked up in the second quarter and is on track for annual appliance collection target.
- **Cool Savings Rebate** – program is on track to meet forecasted participation levels.
- **Summer Sweepstakes** – program launched on May 1. Registration of households in first 60 days of program was significantly below forecast.
- **Every Kilowatt Counts (EKC) Power Savings Event** – the Spring Campaign ran from April 18 to June 15. Coupon redemptions were below expectations, achieving roughly a third of the forecasted activity levels.
- **Aboriginal Pilot Program** – the residential housing retrofit program is in progress.

Commercial/Institutional Programs

In the second quarter of 2008, the OPA had four commercial/institutional programs in the market, with another four under development for launch later in 2008. The quarterly and year-to-date results for these programs are summarized below. Complete descriptions of the programs are provided in the appendix.

Table 4 – Commercial/Institutional Sector Programs Results

Program	Activity Measure	Activity Units	Net Summer Peak Demand Savings (MW)	Net Energy Savings (MWh)	
				First year	Lifetime
2008 Quarter 2					
Electricity Retrofit Incentive Program	Projects	36	1.6	4,748	94,965
Toronto Comprehensive Program ⁷	Projects	16	2.8	4,089	81,783
High Performance New Construction	Custom Projects	0	0	0	0
Commercial Fuel Switching	Projects	0	0	0	0
Total			4.4	8,837	176,748
2008 Year to Date					
Electricity Retrofit Incentive Program	Projects	n/a	4.8	12,732	254,635
Toronto Comprehensive Program ⁵	Projects	18	6.2	15,937	84,478
High Performance New Construction	Custom Projects	0	0	0	0
Commercial Fuel Switching	Projects	0	0	0	0
Total			11.0	28,669	339,113

Commercial/Institutional Sector Summary

- **Electricity Retrofit Incentive Program** – Program activity is expected to increase as most LDCs are delivering program awareness campaigns throughout the summer months.
- **High Performance New Construction (HPNC)** – In the first three months of the HPNC program, more than 100 potential projects across the province have been reviewed.
- **Commercial Fuel Switching** – This new program was launched on schedule during the quarter. The program measures will be delivered through the Electricity Retrofit Incentive Program and High Performance New Construction Program, with results reported as a separate program.

⁷ Certain projects within the Toronto Comprehensive Program have currently only reported energy or demand savings for individual projects and not both. Therefore, the total demand and energy savings for the program shown in Table 4 are not direct translations of each other.

Demand Response Programs

In the second quarter of 2008, the OPA had three demand response (DR) programs in the market, with another one under development for launch later in 2008. The program-to-date results for these programs are summarized below. Complete descriptions of programs are provided in the appendix.

Table 5 – Demand Response Sector Programs Results

Program	Description	Incremental Participants ⁸	Incremental Net Nameplate Capacity (MW)	Incremental Net Expected Summer Peak Demand Savings (MW)
2008 Quarter 2				
<i>peaksaver</i>	Residential Peak Load Shedding	4,332 switches	2.5	2.5
Demand Response 1	Voluntary Peak Load Shedding	12 projects	78.9	27.6 ⁹
Demand Response 3	Contractual Peak Load Shedding	6 aggregators	0.0 ¹⁰	0.0
Aggregate			81.4	30.1
2008 Year to Date				
<i>peaksaver</i>	Residential Peak Load Shedding	14,710 switches	8.7	8.7
Demand Response 1	Voluntary Peak Load Shedding	13 projects	85.5	29.9
Demand Response 3	Contractual Peak Load Shedding	7 aggregators	0.0 ⁸	0.0
Aggregate			94.2	38.6

Demand Response Sector Summary

- *peaksaver* continues to gain awareness, popularity and participants. The program is set for its initial curtailment dispatch this summer.
- *Demand Response 1* is continuing as expected. Contracted capacity is expected to decline as participants transfer from voluntary to firm demand response programs.
- *Demand Response 3* program is on track. Additional aggregators have executed contracts and are enrolling contributors to be active later this year.

⁸ Incremental to participants that enrolled in DR programs in 2006 or 2007.

⁹ The expected summer peak demand savings for the voluntary DR1 program, based on observed reliability rates since program inception, is 35 percent of nameplate capacity.

¹⁰ Participants are each obligated to enroll 25 MW of capacity within 12 months of contract execution.

Customer Based Generation¹¹

In the second quarter of 2008, the OPA had one customer based generation program in market, with another one under development for launch later in 2008. The program-to-date results for these programs are summarized below. Complete descriptions of programs are provided in the appendix.

Table 6 – Customer Based Generation Sector Programs Results

Program	Activity Measure	Activity Units	Net Summer Peak Demand Savings (MW)	Net Energy Savings (MWh)	
				First year	Lifetime
2008 Quarter 2					
Renewable Energy Standard Offer Program (<500 kW)	Projects	19	0.1	130	2,589
Total			0.1	130	2,589
2008 Year to Date					
Renewable Energy Standard Offer Program (<500 kW)	Projects	39	1.0	1,624	32,474
Total			1.0	1,624	32,474

Customer Based Generation Sector Summary

- **Renewable Energy Standard Offer Program:** Nineteen solar power project contracts were signed, and 16 other projects reached commercial operation in the second quarter.

¹¹ Combined heat and power projects (also referred to as cogeneration) less than or equal to 10 MW and renewable energy projects less than or equal to 500 kW are classified as conservation measures in that they offload the supply-side requirements of the power system at the provincial level. These results are also reported in the OPA's quarterly report on supply to reflect the perspective from a local level.

Conservation Fund

The Conservation Fund supports electricity conservation pilot projects that build marketplace capability for conservation programs, test new or unique program elements and approaches, and can be scaled-up to achieve significant energy savings. Its budget for 2008 is \$3 million, made available in three rounds of applications (winter, summer and autumn).

Table 7 – Conservation Fund Results

Sector	Expressions of Interest Received	Projects Approved	OPA Granted Funds (\$)	Total Project Costs (\$)
2008 Quarter 2				
Residential	6	0 ¹²	0 ¹²	0 ¹²
Commercial/Institutional	9	0 ¹²	0 ¹²	0 ¹²
Industrial	0	0	0	0
Total	15	0	0	0
2008 Year to Date				
Residential	13	1	127,037	268,000
Commercial/Institutional	12	1	142,412	690,412
Industrial	0	0	0	0
Total	25	1	269,449	690,412

Conservation Fund Summary

- The Conservation Fund issued an open invitation for expressions of interest during the second quarter. By the end of the quarter, the level of interest in the fund had more than doubled compared to the first funding round. Projects approved and granted funds from this second funding round will be reported in the Q3 progress report.
- The inaugural *Incubator* e-newsletter was launched. This circular will be published three times each year with news, updates, information and other items of interest to members of the conservation project community.
- The Conservation Fund announced its first-ever topic-specific call for expressions of interest. There were four respondents to the call, which allowed ample consideration for funding for the particular topic.

For more information on the Conservation Fund and previously funded projects, please visit www.powerauthority.on.ca/cfund.

¹² Project approval is pending review and was due on July 30, 2008. These projects will be included in the Q3 progress report.

Technology Development Fund

The Technology Development Fund assists innovative energy technologies that will improve the supply and conservation of electricity, are in the pre-commercial stage and require funding for development, demonstration or verification. Its budget for 2008 is \$1.5 million, made available in three rounds of applications (winter, summer and autumn).

Table 8 – Technology Development Fund Results

Sector	Proposals Received	Projects Approved	OPA Granted Funds (\$)	Total Project Costs (\$)
2008 Quarter 2				
Conservation	2	0 ¹²	0 ¹²	0 ¹²
Other	3	0 ¹²	0 ¹²	0 ¹²
Total	5	0	0	0
2008 Year to Date				
Conservation	6	2	260,000	6,160,000
Other	7	2	375,000	9,571,444
Total	13	4	635,000	15,731,444

Technology Development Fund Summary

- In concert with the Conservation Fund, the Technology Development Fund had an open invitation for proposals during the second quarter. By the end of the quarter, the number of proposals received was down slightly from the first quarter. Projects approved and granted funds from this second funding round will be reported in the Q3 progress report.
- The inaugural *Innovator* e-newsletter has been launched. The *Innovator* will be published twice annually with news, updates, information and other items of interest to members of the technology development project community.
- In June, the OPA, in partnership with the Ontario Centres of Excellence, Natural Resources Canada and CEA Technologies Inc., hosted a one-day workshop on “Opportunities for Electricity Storage in Ontario.” The results will be used to inform a coordinated call for proposals for storage demonstration projects in early 2009.

For more information on the Technology Development Fund and previously funded projects, please visit www.powerauthority.on.ca/tdfund.

¹² Project approval is pending review and was due on July 30, 2008. These projects will be included in the Q3 progress report.

Conservation Awareness Programs

In the second quarter of 2008, the OPA undertook a broad range of conservation awareness initiatives. These projects help to raise Ontarians' understanding of the need and ways to conserve energy and help the OPA in optimally targeting, delivering and tracking its conservation programs.

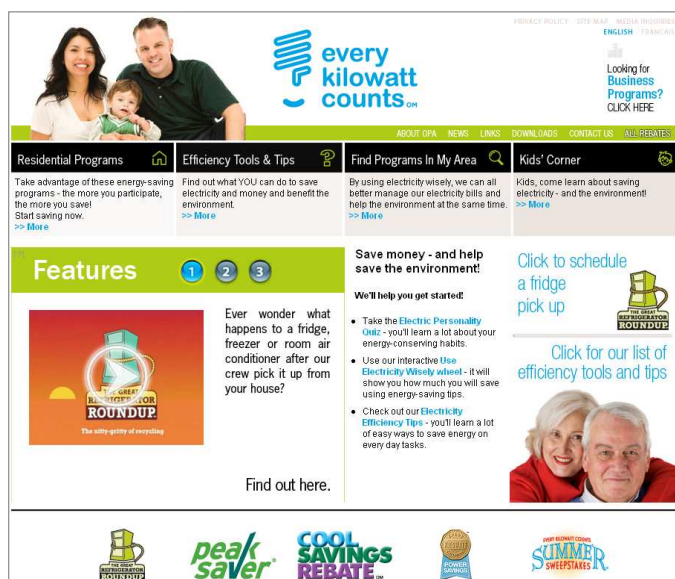
Launch of the revised Every Kilowatt Counts Brand

In April 2008, the OPA re-launched the Every Kilowatt Counts (EKC) brand. From 2006 through 2007, EKC represented a single conservation program targeting home energy efficiency. The re-launching of the brand promotes EKC as the overarching brand of all OPA energy conservation programs in Ontario. The previous Every Kilowatt Counts program lives on as the Every Kilowatt Counts Power Savings Event program, which ran from mid-April to mid-June.



The new brand capitalizes on existing brand awareness by delivering a cohesive and unified voice on energy conservation and raises awareness of the importance of conservation in residential and business markets.

Launch of the revised Every Kilowatt Counts Website



As a major contributor of the brand re-launch, the website www.everykilowattcounts.com was redesigned to include the latest OPA conservation program information and new resources. Sections on the redesigned website include: *Kids Corner*, an interactive and education section dedicated to children; the portfolio of *Mass Market Conservation Programs* and links to program-specific pages; *Efficiency Tips and Tools*, a wealth of information on how to improve energy efficiency in every conceivable category; and *Find Programs in My Area*, a handy way to determine what conservation programs are available in your service area.

Second Annual Conservation Awareness Day at the Rogers Centre

The OPA hosted Conservation Awareness Day at the Toronto Blue Jays game on Sunday May 25. The game was attended by 29,315 spectators and featured an on-field Certificate of Recognition presentation to Toronto Blue Jays president and CEO Paul Godfrey for energy conservation measures installed at the Rogers Centre. The game kicked off with a ceremonial first pitch from Chief Energy Conservation Officer Peter Love. The first 10,000 fans who entered the stadium received environmentally friendly EKC tote bags, and the first 15,000 fans who left the stadium received “Use Electricity Wisely” wheels.



Former Energy Minister Gerry Phillips (left) and Ontario's Chief Energy Conservation Officer Peter Love (right) present Jays President and CEO Paul Godfrey with a certificate for energy conservation measures installed at the Rogers Centre.

First Annual Energy Conservation Week



The OPA promoted Ontario's first annual Energy Conservation Week the week of May 25 – May 31, 2008. The campaign was announced jointly by the Ontario Minister of Energy and Jays CEO and president Paul Godfrey on Conservation Awareness Day at the Rogers Centre.

The promotion was targeted as an awareness and education week for all electricity users in Ontario and was timed to leverage the launch of several mass-market summer programs and new business program advertising in advance of the peak period of summer demand. Using a grass-roots approach, the campaign encouraged wiser electricity use by all Ontarians and was supported by the

OPA website: www.energyconservationweek.ca. Individuals and organizations were encouraged to contribute to the site with their own Energy Conservation Week activities and testimonials.

Program Highlights

Room air conditioner and dehumidifier retirement pilot a success

The 2008 Every Kilowatt Counts Power Savings Event ran at more than 1,800 retail locations across the province from April 18 - June 15. This spring campaign was the fifth of the program, which started in 2006.

A new addition to the program for the spring 2008 campaign was a room air conditioner (RAC) and dehumidifier retirement pilot project, conducted in cooperation with the Clean Air Foundation and Canadian Tire Corporation. On three consecutive weekends starting May 31, Kitchener, Waterloo, Cambridge and Guelph area residents were encouraged to bring in their old, inefficient room air conditioners and/or dehumidifiers to one of nine Canadian Tire stores to be decommissioned and recycled for free. Participants were given a \$25 instant rebate coupon off of an ENERGY STAR® qualified replacement model. More than 400 RACs and 400 dehumidifier units were collected during the pilot program. Dehumidifier unit retirement was a resounding success, as program targets were exceeded by more than 350 percent.



Older, inefficient RACs consume about 50 percent more energy than newer efficient ENERGY STAR qualified models, and older dehumidifiers can use at least 20 percent more electricity than an ENERGY STAR qualified model. Retiring old, inefficient RACs and dehumidifiers helps the OPA meet its energy conservation targets, reduces greenhouse gas emissions and removes harmful old refrigerant technologies (such as CFCs and HCFCs) from the environment. More information can be found at www.cleanairfoundation.org/keepcool.

Summer Sweepstakes Launched

The Summer Sweepstakes program was launched on May 1. It challenges consumers to reduce their electricity consumption by 10 percent over the period of July 1 – August 31 compared their consumption during the same time frame in 2007.



To participate, consumers were required to register by July 15. After the savings period has elapsed, customers who have achieved their 10 percent energy savings target are eligible to win various prizes such as ENERGY STAR qualified kitchen appliance packages, ENERGY STAR qualified laundry appliance packages or a variety of other rewards. Customers who registered early are qualified for early bird prize draws. The Summer Sweepstakes program encourages energy conservation awareness and behaviour and is a complement to all other conservation programs in the EKC portfolio. Early bird prize winners will be drawn on August 15, 2008, and grand prize winners will be drawn on January 30, 2009.

Incentives for fuel switching measures now available

In the second quarter of 2008, the OPA launched its Commercial Fuel Switching initiative, which provides incentives for the replacement of certain electric appliances and equipment with those powered by alternate sources of energy (including but not limited to natural gas, solar and geo-thermal energy). Examples of fuel switching measures include space cooling or heating, hot-water heating, refrigeration, dehumidification, commercial food service appliances, air compression equipment and industrial cold storage.

Fuel-switching measures have been added as eligible measures for incentives within the Electricity Retrofit Incentive Program and the High Performance New Construction program, which are both currently in the market. Fuel-switching measures will also be eligible within the Multifamily Buildings Program and the Industrial Energy Efficiency Program, both of which will be launched later this year. The breadth of these programs provides exposure for fuel-switching measures across every sector -- residential, commercial, institutional and industrial.

Market gearing up for Industrial Energy Efficiency Program

The OPA and Ontario's industrial market are gearing up for the launch of the OPA's Industrial Energy Efficiency Program in the fourth quarter of 2008. The program will encourage the development and implementation of energy-reduction initiatives in industrial processes, the installation of electricity monitoring and targeting systems, the hiring of energy managers, specialized training and awareness programs, and energy assessments and feasibility studies.



Two major milestones in the roll-out of the program were achieved in the second quarter of 2008. The program rules were posted to the OPA's website, allowing interested organizations to begin their internal capital and project planning processes for program participation. The OPA also issued a request for proposals for program management services to assist with program implementation.

In Ontario, industry accounts for approximately one-third of electricity system demand. Energy consumption is the single most controllable cost available to industrial business today – and often the most overlooked. This means industries with thin margins have a real opportunity to boost profit margins by adopting energy-saving business practices. Making energy efficiency a part of every business decision delivers tangible benefits such as increased productivity, reduced costs and improved competitiveness.

For more program information visit www.everykilowattcounts.com/industrial.

Glossary

First-year energy savings: the electricity savings achieved in the first year of a conservation program.

Free rider: A number of customers take advantage of rebates or cost savings available through conservation programs even though they would have installed the efficient equipment on their own. Such customers are commonly referred to as “free riders.” Such customers may already be motivated to purchase energy-efficient equipment even without utility-sponsored incentives. The savings resulting from free riders cannot be attributed to the conservation program sponsored by the utility and therefore should not be counted as resource savings.

Gross savings: change in energy consumption and/or demand that results directly from program-related actions taken by consumers that are exposed to the program.

Lifetime energy savings: the electricity savings achieved over the course of an energy conservation measure’s lifetime, aggregated on a program level.

Nameplate capacity: the total demand response capacity of a program as specified by contracts for industrial demand response programs or the number of devices for residential demand response programs.

Net-to-gross ratio: an adjustment factor that reduces gross energy-savings estimates to reflect two types of adjustments: (a) savings that would have been achieved even without a conservation program; and (b) savings that are not actually achieved in real world implementation.

Net savings: the percentage of gross savings attributable to the program.

Prescriptive input assumptions: the assumptions about program measures made during program design relating to expected program results. Assumptions include energy savings per unit, demand savings per unit and net-to-gross ratios.

Summer peak demand savings: the electricity savings as measured at the time of the summer province-wide electrical system peak.

Appendix

This appendix includes a detailed description of different reporting tracks used by the OPA, summary sheets for the OPA's conservation programs that were in the market during the second quarter of 2008, as well as the scheduled in-market dates for all OPA conservation programs in 2008. The program descriptions provided are for 2008 only. Some programs will continue into 2009; however, there may be modifications to program elements from year to year.

Ontario Power Authority's Conservation Reporting Methodology

The Ontario Power Authority uses three different reporting “tracks” to report on its funded conservation programs -- forecasted, reported and verified savings. Each of these tracks provides estimates of energy and peak demand savings resulting from conservation programs, and each track has a different level of certainty associated with the results.

Forecasted Savings

Planning, designing and developing a conservation program involves developing predictions of the potential energy and demand reductions that could result from it. These forecasted savings are based on a set of input assumptions, including estimated participation rates, energy and demand reductions resulting from program measures, the effective useful life of measures and other factors. The forecasted savings can be used as targets for the program, against which actual performance can be measured. Forecasted savings tend to have the largest bands of uncertainty associated with them.

Reported Savings

Reported savings reflect the preliminary results of conservation programs using the same input assumptions that were used to develop the program.¹³ Program activity is tracked using units specific to the program, such as coupons redeemed, appliances retired or control devices installed. These activity units are used to estimate energy and demand savings with the same assumptions used to create the program – allowing for straight comparisons to the forecasted savings.

Reported savings reflect the success of program efforts in driving participation and can be used to gain early insights into a program's effectiveness. These results are more certain than forecasted savings and can help to improve the assumptions used for the further development or refinement of conservation programs.

Verified Savings

Measurement and verification studies are conducted to confirm that reported claims of energy and peak demand reductions have actually occurred. The measurement component involves

¹³ For some 2008 programs, the input assumptions used for reported savings have been updated mid-way through 2008 based on the evaluation results and verified savings from 2007 programs. These adjustments have been made to provide a more accurate estimate of the results of the 2008 programs.

collecting data from various sources, including site visits, surveys, utility bills, equipment invoices, sensors, occupancy records and/or production reports. The verification component involves using the measured data to verify that anticipated energy and peak demand savings occurred. This means verifying that conservation measures have been implemented to a reasonable standard of quality, are operating as intended and are capable of generating energy and peak demand savings.

Verified results represent the best estimate of a conservation program's actual savings and greatly reduce the level of uncertainty surrounding program results. Verified results can be greater or less than forecasted and reported results, depending on factors beyond the program administrator's control. Although verified savings represent the results with the highest degree of certainty, these factors mean that some level of uncertainty will always be associated with reporting on conservation program results. The credibility of verified results is improved by separating the responsibility for program design and implementation from the responsibility for verification.

The following figure illustrates the uncertainty surrounding the results of the three reporting tracks. The decreasing uncertainty as results move from forecasted and reported to verified indicate that measurement and verification can provide results that are more reliable, predictable and transparent. The verification process can provide regular feedback about program performance, leading to the development of more effective programs and activities. The assessments also assist in refining estimates of conservation potential, improving understanding of market and capability building requirements, and generating better assumptions for forecasting savings. Verified savings, in terms of megawatts or megawatt-hours, can be less than reported savings – but the verified results are more valuable to system planners because the capacity they represent (e.g., demand reduction) can be more consistently equated with capacity of supply resources.⁶

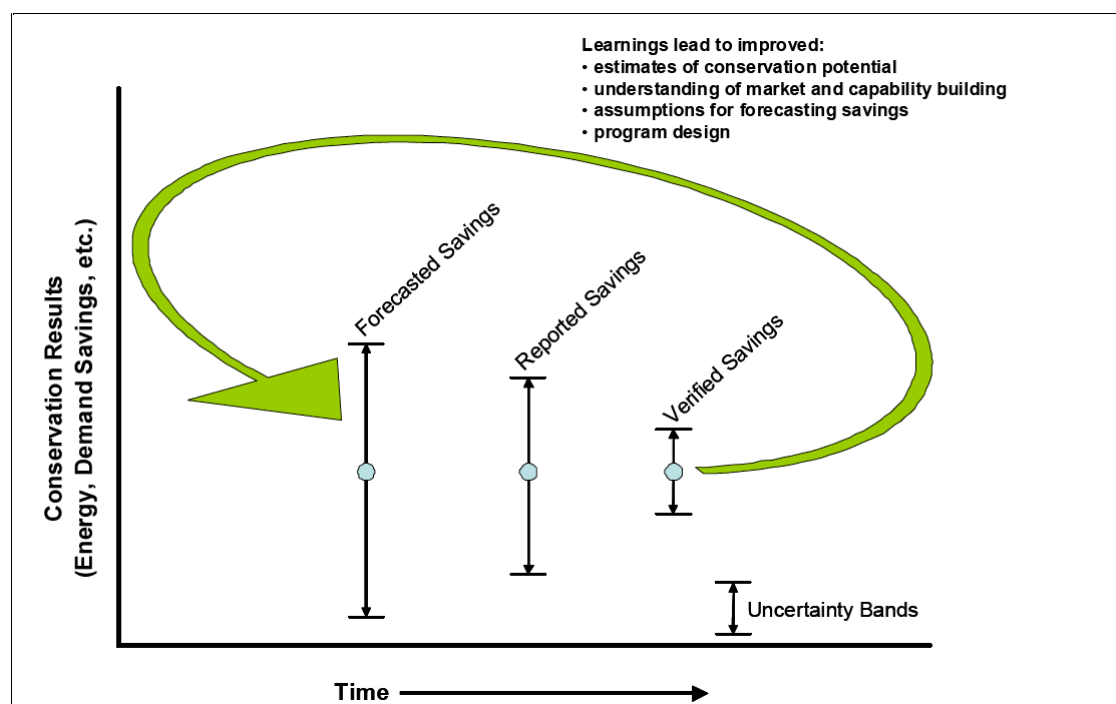


Table 9 – Program In-Market Schedule

Program Sector	Quarter 1 January – March	Quarter 2 April – June	Quarter 3 July – September	Quarter 4 October – December
Mass Market Programs				
Great Refrigerator Roundup Program	x	x	x	x
Cool Savings Rebate Program	x	x	x	x
Aboriginal Program		x	x	x
Summer Sweepstakes		x	x	
Every Kilowatt Counts Power Savings Event		x		x
Power Savings Blitz			x	x
LDC Custom Program			x	x
Community Engagement Program				x
New Single Family Construction				x
LDC Home Energy Efficiency Program				x
Commercial/Institutional Programs				
Electricity Retrofit Incentive Program	x	x	x	x
Toronto Comprehensive Program	x	x	x	x
High Performance New Construction		x	x	x
Commercial Fuel Switching		x	x	x
Multifamily Buildings Program			x	x
Chiller Plant Re-Commissioning			x	x
Low Income Single Family Home				x
Building Portfolio Program				x
Industrial Programs				
Industrial Energy Efficiency Program				x
Demand Response Programs				
<i>peaksaver</i>	x	x	x	x
Demand Response 1	x	x	x	x
Demand Response 2				x
Demand Response 3	x	x	x	x
Customer Based Generation				
Renewable Energy Standard Offer Program	x	x	x	x
Clean Energy Standard Offer Program				x
Conservation and Technology Fund				
Conservation Fund	x	x	x	x
Technology Development Fund	x	x	x	x

Program Name:	Great Refrigerator Roundup (LDC Appliance Retirement Program)
2008 In-market dates:	January 1 – December 31, 2008
Objectives:	• To achieve energy and demand savings through the removal and decommissioning of older, working, inefficient secondary and primary refrigerators, freezers and air conditioners • To improve conservation awareness in the market through information materials provided to program participants.
Target market:	• Ontario households with full-size, working fridges or freezers more than 10 years old.
Program description:	• Free pick-up and removal of older, working, inefficient, full-size fridges and freezers. • The program also picks up old air conditioners, mini-fridges and mini-freezers if a full-sized fridge or freezer has already been scheduled for pick-up. • Appliances are decommissioned in an environmentally responsible manner, with only a small amount of material going to landfill.
Program partners/ delivery structure:	• ARCA Canada Inc. and Appliance Recycling Centers of America Inc. (online appointment booking, pick-up and decommissioning services) • Green Group (external program manager) • Participating local distribution companies (LDCs) (local promotion to their customer base)
Marketing elements:	• Local promotion by participating LDCs through tactics such as bill inserts, bill messages, customer newsletters • Community and ethnic newspaper advertising • Province-wide print and radio advertising • Program website (information and appointment booking) • Toll-free number (appointment booking)

Program Name:	Cool Savings Rebate Program (Home Heating and Cooling Efficiency Program)
2008 In-market dates:	January 1 – December 31, 2008
Objectives:	• To provide electricity consumers with incentives to replace their inefficient cooling and heating systems • To increase the number of purchases of ENERGY STAR® qualified, high-efficiency and programmable devices • To reduce peak demand in the summer and winter seasons and increase conservation awareness.
Target market:	• Residential customers with inefficient cooling and heating systems
Program description:	• An incentive to replace existing systems with ENERGY STAR qualified products • Central cooling systems can be replaced with an ENERGY STAR air conditioning system, which exceeds current regulatory efficiency standards. • An incentive for the installation of a programmable thermostat by a contractor and on the installation of ENERGY STAR heating systems, specifically with an energy-efficient furnace motor.
Program partners/ delivery structure:	• Managed by the Heating, Refrigeration and Air Conditioning Institute of Canada • Delivered through registered heating, ventilation and air conditioning contractors across the province • Any contractor in Ontario can participate in the program, at no cost, upon demonstration that they meet all of the provincial requirements to undertake this type of work.
Marketing elements:	• Program website with participating contractor look-up tool • Brochures

Program name:	Energy Efficiency and Conservation Measures for Aboriginal Communities
2008 In-market dates:	January 1 – December 31, 2008
Objectives:	• Identify opportunities for electricity conservation and effective channels for delivery of conservation in Ontario's Aboriginal communities • Increase capability building and conservation awareness amongst a key segment of the Ontario population • Develop a program with input from various stakeholders, along with guidance from a council of elders and community champions.
Target market:	• While there are several Aboriginal groups in Ontario, primarily the Métis and First Nations, the initial work will focus on the First Nations communities, specifically those located on the 134 reserves across the province.
Program description:	• The delivery of energy kits and information incorporated in the community through awareness campaigns and various aboriginal teachings. • An information and education conference where Aboriginal groups have a chance to provide input. • Comprehensive housing retrofits. In 2008, it is anticipated that about 1,000 audits will be undertaken, with an estimated 30 percent of those homes having the retrofit work undertaken in 2008.
Program partners/ delivery structure:	• Charles Fox Consulting (external program manager) • Development of program components by council of elders and community champions • Hydro One (distribution of in-home energy monitors to retrofit pilot communities) • Hydro One Remotes (delivery of energy kits to hard-to-reach First Nations Communities)
Marketing elements:	• The educational component will be delivered through a number of channels, including the Aboriginal educational channels and other venues to assist in supporting their cultural teachings related to conservation.

Program Name:	Summer Sweepstakes
2008 In-market dates:	May 1 – August 31, 2008
Objectives:	• Increase consumer awareness of the importance of conservation during the summer peak season. • Cross-promote other OPA conservation programs such as the Great Refrigerator Roundup and Cool Savings.
Target market:	• Residential customers who have an active account with a participating Local distribution companies (LDCs)
Program description:	• Customers call/visit website to register to participate in program • Customers eligible to win two tiers of prizes • Early bird prize draw available to qualifying customers who register to participate • Grand prize draw available to qualifying customers who register and achieve 10 percent savings as compared to the same period in 2007 (July 1 – August 31) • Billing analysis conducted by LDCs using weather normalization factor and savings methodology • Full contest rules posted at: www.everykilowattcounts.com/sweepstakes
Program partners/ delivery structure:	• LDCs • Contest management firm, under contract with the OPA
Marketing elements:	• Province-wide promotional support: • Advertising (e.g. print, radio, etc) • Program website • Local promotional support through LDCs: • Bill inserts • Newsletters

Program Name:	Every Kilowatt Counts Power Savings Event
2008 In-market dates:	April 18 - June 15 and October 1 - November 16, 2008
Objectives:	• Increase awareness of featured energy-saving consumer products' availability, applications and benefits • Achieve energy and demand savings by encouraging consumers to purchase and install featured products
Target market:	• Every household in Ontario (4.58 million)
Program description:	• Three categories of featured products: 1) OPA rebated – OPA provides instant rebate coupons and point-of-purchase (POP) merchandising materials to participating retailers. E.g., ENERGY STAR® qualified CFL flood lights, electrostatic or pleated fabric furnace filters, pool/spa timers, T8 fixtures/ballasts, ENERGY STAR® qualified residential light fixtures 2) OPA promoted – OPA will provided POP merchandising materials to participating retailers only – no coupon rebate. E.g., ENERGY STAR® qualified CFLs (all shapes), control devices – dimmers, motion sensors and timers 3) Retailer promoted – OPA will encourage retailers to promote at their own cost. E.g., awnings, window film, electric water-heater blankets, pipe wrap, low-flow toilets • All coupons and promotions are technology-specific but not manufacturer- or retailer-specific
Program partners/delivery structure:	• 40+ retailer partners, representing more than 1,800 individual stores • External delivery agent: energyshop.com
Marketing elements:	• Province-wide promotional support: • Advertising (e.g., print, radio etc) • Program website • Toll-free program hotline • Retailer level promotional support: • In-store merchandising/training staff provided by OPA at 1,800+ stores • POP materials • Co-op promotion fund for retailers for off-shelf merchandising

Program Name:	Electricity Retrofit Incentive Program (ERIP)
2008 In-market dates:	January 1 - December 31, 2008
Objectives:	• To encourage energy conservation awareness and build conservation capability across the business sector • To offer financial incentives for energy retrofits that result in peak demand savings and annual energy savings that are sustainable, measurable and verifiable to small, medium and large consumers.
Target market:	Electricity customers in the commercial, institutional, industrial and agricultural sectors
Program description:	• The program focuses on lighting; motors; heating, ventilation and air conditioning; and overall electricity systems. • The program offers two tracks for retrofit incentives: • <u>Prescriptive</u> - predefined technologies, with associated predefined energy savings, and predefined financial incentives • <u>Custom</u> - allows owners to use other, more specific solutions to their electricity-efficiency retrofitting. Custom projects are evaluated on the power and energy performance improvement of the specific technology, equipment and systems installed. Reimbursements are based on the specific level of energy-efficiency improvement.
Program partners/delivery structure:	• Delivered through participating local distribution companies (LDCs) • Consumers interested in participating send their applications directly to their LDC for review and approval.
Marketing elements:	• Primarily marketed through the LDCs using joint advertising and a central brand approved by the OPA • Program website

Program Name:	Toronto Comprehensive (City of Toronto, Toronto Hydro & BOMA)
2008 In-market dates:	January 1 - December 31, 2008
Objectives:	To achieve 300 MW of demand reduction in the City of Toronto by 2010 (ministerial directive)
Target market:	New construction and existing buildings in the City of Toronto
Program description:	- The program includes custom energy-efficiency (retrofit and new construction) projects for all sectors delivered in Toronto by Building Owners and Managers Association (BOMA) of Greater Toronto, City of Toronto and Toronto Hydro. BOMA component - Incentives for retrofits that provide sustainable electricity demand and energy reductions in existing commercial buildings larger than 25,000 square feet City of Toronto (Energy Efficiency Office) component - Better Buildings Program – for retrofits to existing MUSH* sector and multi-family buildings. - Better Buildings Program (New Construction) – for energy-efficiency upgrades to all non-residential new construction buildings. Toronto Hydro component - A portfolio of projects targeted at existing commercial buildings smaller than 25,000 square feet and industrial properties. *Municipalities, universities, schools and hospitals
Program partners/ delivery structure:	- Program is delivered through three program managers: - Building Owners and Managers Association (BOMA) - The City of Toronto Energy Efficiency Office - Toronto Hydro
Marketing elements:	- Each program manager is responsible for its own marketing and publicity. Typical outreach and development activities include: - Websites - Earned media - Industry events - Program brochures

Program Name:	High Performance New Construction (HPNC)
2008 In-market dates:	March 26 - December 31, 2008
Objectives:	• To encourage the implementation of energy-efficiency measures in new construction • To build support in the channel by engaging, through the program manager, both the design and build communities, as well as the end user • To mitigate traditional barriers to high-performance building construction and stimulate more than 2,090 buildings across commercial, industrial, institutional, retail, multi-residential and agricultural sectors to build above the current applicable building code • To contribute to the creation of a culture of conservation by increasing awareness of the link between taking conservation actions and a corresponding reduction in energy bills.
Target market:	Developers and architects of new construction and major renovations of non-residential buildings in the province of Ontario
Program description:	• A selection of measures with pre-identified savings • Custom application process (with computer energy modelling) to allow for a broad range of measures • Three levels of incentives: • Basic track – prescriptive technologies (air conditioning, motors, transformers, lighting) and projects where the modelled energy savings are between zero and 25 percent • Advanced track – projects where the modelled energy savings are between 26 and 50 percent • High-performance track – projects where the modelled energy savings are greater than 50 percent
Program partners/delivery structure:	• Enbridge Gas Distribution was selected as the program delivery agent across the province except for in Toronto where the City of Toronto runs the program. • Union Gas will be working in partnership with Enbridge as sub-contractor to deliver the program in their franchise area.
Marketing elements:	• Program website

Program Name:	Commercial Fuel Switching
2008 In-market dates:	June – December 31, 2008
Objectives:	• To acquire demand savings on a cost-effective basis to reduce summer peak demand • To provide information and supporting analysis to facilitate evaluation of alternate energy sources using life-cycle costing analysis, credible software tools and design best practices • To support the early-stage evaluation of space-cooling technologies through early project screening that involves a financial and technical analysis of alternatives based on the operating parameters • To address the issue of low-income electric heating. Funding will be included to support direct installs of electric hot-water and space heating conversions in up to 500 low-income homes across the province.
Target market:	• Commercial food services – food preparation equipment • Commercial/multi-family buildings – domestic hot-water heating • Commercial buildings – space cooling • Industrial – process equipment (compressors, cold storage, arc furnaces) • Social housing single-family homes – conversion of electrically heated homes with electric hot-water tanks
Program description:	• The program will encompass a suite of incentives and capability building elements designed to displace electricity peak demand. • Fuel-switching measures are technologies that use alternate energy sources to substitute electricity. • Eligible peak reduction measures use natural gas, solar thermal and ground-source energy sources. • It will aim to encourage market participants to fully evaluate alternative fuel appliances and, where economical and practical, retire the electrical equipment.
Program partners/ delivery structure:	• Delivered through four existing OPA conservation programs 1) Electricity Retrofit Incentive Program 2) High Performance New Construction 3) Multifamily Buildings Program 4) Industrial Energy Efficiency Program • Program partners and delivery structure based on delivery program
Marketing elements:	• Delivered through four existing OPA conservation programs 1) Electricity Retrofit Incentive Program 2) High Performance New Construction 3) Multifamily Buildings Program 4) Industrial Energy Efficiency Program • Marketing elements based on delivery program

Program Name:	<i>peaksaver</i> (Residential and Small Commercial Demand Response)
2008 In-market dates:	January 1 - December 31, 2008
Objectives:	• To develop voluntary demand response capacity in the residential and small commercial sector • To educate consumers about the electricity system and the benefits of peak demand reduction, including enhancing system reliability, reducing system costs and benefits to the environment.
Target market:	• Residential and small commercial (<50 kilowatt demand) customers that have central air conditioning and are located in service territories of summer-peaking LDCs.
Program description:	• LDCs install load control devices on the central air conditioners (and electric water heaters where applicable) of eligible customers who volunteer to participate in the program. • During high electricity demand periods, the devices are remotely activated to reduce air conditioner/water heater operation for short periods, leading to an overall reduction in demand • The load control device is installed at no cost, and the participant receives a \$25 financial incentive for enrolling.
Program partners/ delivery structure:	• Delivered by participating, summer-peaking LDCs, which are responsible for local marketing, participant enrolments, fulfillment of financial incentives, reporting, customer care and device maintenance. • The OPA is contracting separately for dispatch administration and aggregation operation to manage and report on the device activations.
Marketing elements:	• Radio advertising • Program website • Local marketing and events by LDCs

Program Name:	Demand Response 1 (DR1) (Voluntary Economic Demand Response)
2008 In-market dates:	January 1 - December 31, 2008
Objectives:	- To encourage load shifting from peak period to off-peak period, permitting the reduction of system peak demand - To create short-term demand response capacity in response to the IESO three-hour-ahead pre-dispatch price signal in the electricity market - To encourage demand response based upon high market prices (hourly Ontario electricity prices).
Target market:	Any commercial or industrial facility with a minimum load of 500 kW. Both direct participants and aggregators can participate subject to contracting for this minimum level of business. The program is available to all regions of Ontario.
Program description:	- Program is “market based,” designed for consumers that can curtail load in response to economic signals, primarily using existing equipment and processes. - Participants receive compensation for curtailing the electricity demand of their project. Participants also receive compensation for an initial and independent assessment of the project potential and eligibility, and for monthly assessment and verifications of load reductions. - Projects can be based on load interruption, load shifting or behind-the-meter generation (excluding diesel, coal, bio-fuel, and bio-diesel). - No maximum on the number of hours of operation. Load curtailment is voluntary. Minimum of 0.5 MW load reduction, achievable for at least one hour in a relevant season. No financial penalties for under- or over-performance.
Program partners/ delivery structure:	- Administered directly by the OPA - Participants offer their own “strike price” on a monthly basis, at which they are willing to curtail load. The participant’s strike price must be higher than the OPA’s minimum defined floor strike price for the month. - Project applications must include a measurement and verification (M&V) plan, acceptable to the OPA. The M&V plan and all curtailments must be verified by an M&V consultant. - Participants receive monthly payments for curtailment.
Marketing elements:	- Promoted primarily through word of mouth, aggregators and some consultants - OPA website contains detailed information on the program and how to participate.

Program name:	Demand Response 3 (DR3) (Contractual peak demand shedding)
2008 In-market dates:	January 1 - December 31, 2008
Objectives:	To assist in reducing the system peak demand during pre-determined scheduled periods noted for high demand, high prices and tight supply cushion by contracting the interest of a broad range of consumers to participate in managing the electricity needs of Ontario.
Target market:	- Any commercial or industrial facility with a minimum load of 50 kW. - Available to all regions of Ontario except the Bruce area, southwestern Ontario and a portion of York Region.
Program description:	- The program provides incentives to major power users who contractually agree to reduce their power use by a pre-determined amount when called upon by the OPA. - Participants make themselves available during scheduled hours for potential notices to reduce load. Participants can select to be available to reduce load up to 100 or 200 hours per year. Contracts are available for one, three or five years. - This guaranteed demand reduction allows power planners to reduce the total system demand for electricity and, therefore, all ratepayers' electricity costs, over the long term. - Both direct participants and aggregators can participate subject to contracting for minimum business levels of 5 MW and 25 MW respectively. Thus, given these restrictions, aggregators will be key to the success of this program, as they form the front line in securing participation by commercial and industrial properties.
Program partners/ delivery structure:	The program is delivered primarily through aggregators, and to a lesser extent, large industrial loads.
Marketing elements:	The program is promoted primarily through word of mouth, aggregators and some consultants, in addition to some targeted business marketing.

Program name:	Renewable Energy Standard Offer Program (RESOP)
2008 In-market dates:	January 1 – December 31, 2008
Objectives:	The Renewable Energy Standard Offer Program helps Ontario meet its renewable energy supply targets by facilitating the operators of small renewable energy generating facilities to provide power and receive payment for the power they provide.
Target market:	- There are no restrictions on who can participate in the program other than OPG and its affiliates. Projects cannot have had an electricity-supply contract with the government or have any current involvement by or contract with OPG. Eligible renewable energy projects must: - be located in Ontario - have an installed generating gross nameplate capacity of no more than 500 kilowatts - be connected to an eligible distribution system licensed by the Ontario Energy Board at a voltage of no more than 50 kilovolts - be metered to the distribution system in accordance with OEB requirements - conform to project size within transmission constraint limits, as applicable. - Projects that generate electricity from technologies using any one of the following sources are eligible for the program: wind, thermal solar electric, solar PV, renewable biomass, biogas, bio-fuel, landfill gas or waterpower. - The OPA will restrict participation in certain areas or sub-zones where the transmission system is not capable of receiving additional power. A list of sub-zones is published on the OPA website.
Program description:	- The Renewable Energy Standard Offer Program removes obstacles for smaller renewable source electricity generators (500 kilowatts or less) through a simplified application process and providing stable pricing over a 20-year contract. - RESOP contracts involve all four renewable energy sources – wind, hydroelectric, biomass and landfill gas, and photovoltaic cells.
Program partners/delivery structure:	- Local distribution companies (LDCs) - Operators of small renewable energy generating facilities
Marketing elements:	The program is promoted primarily through word of mouth and OPA website information sections.