



## OPA DRAFT EVALUATION PLANS

**DRAFT VERSION 1.0**

**October 24, 2007**

**The current draft version of this document is intended for internal discussion purposes only.**

## Draft Evaluation Plans

Draft Evaluation Plans are the critical element in the program design function that allow, pre-program delivery, an overall assessment of the included technologies, delivery strategies, objectives, and program cost effectiveness. The early preparation of Draft Evaluation Plans ensure that the program design will accommodate an efficient and effective program evaluation, which results in a clear and accurate demonstration of overall program impacts.

Draft Evaluation Plans are developed by a team of Program Designers and EM&V Managers, with additional insight derived from program delivery agents, based on their knowledge of the program's objectives, delivery mechanisms and understanding of the key drivers encouraging program participation. Draft Evaluation Plans can also leverage lessons learned from previous program experience.

The development of the plan by these parties helps build an understanding of how the program elements work to affect suppliers and customers in the market, which in turn facilitate the programs objectives. Additionally, the process identifies the key program elements and research requirements necessary to ensure a full and complete program evaluation can be undertaken.

Draft evaluation plans are critical as they form the basis to determine all necessary program related assessments and identify which protocols require consideration from the EM&V Manager.

A secondary function of this process is to develop the initial budget for evaluation.

The matrix below shows the current status of the Draft Evaluation Plans undertaken by the EM&V group.

2007 Programs Draft Plan	Status		
	Completed	Near Completion	In-Progress
Every Kilowatt Counts (Spring)	x		
Summer Savings	x		
The Great Refrigerator Roundup	x		
Affordable Housing Program	x		
Peaksaver®		x	
ERIP		x	
Aboriginal Program		x	
City of Toronto			x
Small Commercial Direct Install			x
Cool/Hot Savings			x
Social Housing			x

The Draft Evaluation Plans for the 2007 Every Kilowatt Counts Campaign and the 2007 Summer Savings program are attached as examples. These Draft Evaluation Plans have been translated into Final Evaluation Plans by a third-party Evaluation Contractor and the program's evaluations are currently in-process.

# 2007 EVERY KILOWATT COUNTS PROGRAM DRAFT EVALUATION PLAN

## A. Program Description

### Goals and Objectives

The EKC program is a province-wide education and incentive program targeted at Ontario's residential households. In 2006, the OPA ran two campaigns of the EKC program – a Spring campaign (April 21 - August 31) and a Fall campaign (September 28 – November 30). The OPA seeks to build upon the success to date and the momentum of the 2006 campaigns, by continuing the program in 2007.

The goal of the program is to provide Ontario homeowners and tenants with the necessary tools and information on how to save electrical energy and to have a positive impact on the environment by inducing customers to implement 'easy to do' and 'low cost' energy saving measures. Program managers forecast the EKC program is likely to result in 112 GWh and 3 MW of peak savings.

The primary objectives of the program are to:

1. Increase Ontarians' awareness of ways to conserve and efficiently use electricity within their homes.
2. Achieve energy and demand savings by encouraging Ontarians to undertake behavioural changes and by providing instant discounts on the purchase of energy saving products.

Additional detailed objectives of the program, which relate to the primary objectives, include:

3. Increasing Ontarians' understanding of the benefits of the behavioural or 'no-cost' energy saving tips promoted the EKC program.
4. Increasing Ontarians' understanding of the attributes and benefits of the energy efficient technologies featured in the EKC campaign and where to purchase the products.
5. Increasing Ontarian's awareness of other OPA or nationwide conservation programs available to households in Ontario.
6. Increasing the number of EKC featured products that are purchased and installed in Ontario households (i.e. household penetration rate).
7. Increasing the propensity/willingness of Ontario households to undertake one or more of the energy saving tips identified in the EKC program.

Additional strategic and capacity building objectives for the OPA, related to the delivery of the program include:

8. Establishing new relationships and enhancing existing relationships with manufacturer and retailer channel partners. Detailed objectives include:
  - Convince at least 30 participating retailers to accept coupons and help deliver the program.
  - Directly consulting, with major manufacturers and retailers in the product selection for the fall campaign, 5-6 months in advance.
  - Execute participation agreements between the OPA and all participating retailers.
  - Achieve a high level of overall satisfaction among retailers and manufacturers with the design and delivery implementation of the EKC program materials.
  
9. Enhancing relationships with local distribution company (LDC) channel partners. Detailed objectives include:
  - Work with at least 80 participating LDCs to deliver the program's marketing materials.
  - Achieve a high level of overall satisfaction and level of commitment among LDCs with respect to the design and implementation of the EKC program.
  
10. Achieve increased customer awareness of the potential positive environmental impacts associated with reducing their energy usage during peak hours.

The OPA expects the Evaluation Contractor selected to complete the work to produce a Final Evaluation Plan that will provide answers to the first seven objectives as a priority and a separate section of the Final Evaluation Plan to provide an assessment of whether objectives 1 through 7 were achieved and provide an assessment of progress toward objectives 8, 9, and 10 if the data collected to address other research objectives is sufficient to provide a quality assessment of these last three objectives.

### **Program Timing and Key Elements**

The program will have two in-market campaigns: April 16 – June 17 (Spring campaign) and October 1 - November 30 (Fall campaign). In the Spring campaign, a direct mail booklet will be sent to every Ontario household (approximately 4.5 million) during the first 10 days of the campaign. The mailing will be done in partnership with over 80 local distribution companies (LDCs), and the booklet will be co-branded with the LDC's logo. The booklets will have 'easy to do' energy savings tips and instant rebate coupons for 6 products. The coupons will be product-specific, but will not be manufacturer-specific or retailer-specific.

The coupon distribution strategy (e.g. direct mail, in-store, utility bill inserts) for the Fall campaign has not yet been decided but a decision is expected by June 1, 2007.

The products and discounts for the Spring Campaign are:

- \$3 off ENERGY STAR® qualified CFL's

- \$25 off ENERGY STAR® qualified ceiling fans
- \$3 off purchase of 3 or more pleated fabric or electrostatic furnace filters
- \$5 off outdoor solar light products
- \$5 off outdoor motion detectors lighting products
- \$3 off dimmer switches

The products to be included in the Fall campaign will be set by end of April 2007. Products currently under consideration include:

- ENERGY STAR® qualified CFLs,
- Seasonal LED lights,
- Outdoor heavy duty timers (for block heaters, seasonal lights etc),
- Baseboard programmable thermostats,
- Residential T-8 lights and fixtures, and
- Power bars.

The OPA's goal is to ensure that the coupons can be redeemed at over 30 retailers, including the top six hardware chains, with more than 3000 locations across the province. In addition to the direct mail booklet, coupons will be made available to consumers at retail locations as well as through community events hosted by the Local Distribution Companies (LDC). Coupons will be bar-coded to enable tracking of coupon redemptions by: product, LDC, coupon distribution method (e.g. addressed mail, unaddressed mail, in-store coupons); and postal area.

The program will be supported by a media campaign (print and radio ads), in-store point of purchase (POP) material, a program website, a toll-free hotline, as well as local promotion by LDCs. The media campaign and the program website will also cross promote other OPA program opportunities.

### **Estimated Participation and Results**

Based on the results of the 2006 campaigns, and the products which have been selected or are under consideration for the 2007 campaigns, the OPA estimates that the 2007 program will generate approximately 128 GWH of annual savings, 1,400 GWh of lifetime energy savings, 3 MW of summer peak demand reductions and 44 MW of winter peak demand reductions. The detailed calculations used to derive this calculation will be provided to the Proponent of the Winning Proposal.

### **B. Program Theory**

The program manager's expect that the program will have impacts on customers and suppliers. The six key anticipated effects are described below.

- 1) **Impact on Customer Awareness** - The Program will result in an increased customer awareness of:
  - The Every Kilowatt Counts Program

- The opportunities to save energy through behavioural or ‘no-cost’ energy-saving tips promoted in the EKC campaign
- The opportunities to save energy by purchasing and installing the featured energy-saving products in the EKC campaign
- The OPA’s other conservation and energy efficiency programs

## 2) Impact on Customer Behaviours

- The direct mail campaign will be a significant catalyst for customers to take actions: either in the form of energy savings tips at home or redeeming coupons at the store.
- Direct mail coupons will serve as a stimulus for customers to redeem their EKC coupons at local stores. Based on market research and coupon redemption results from the 2006 campaigns, we estimate that approximately 40-50%<sup>1</sup> of Ontario customers will read or scan the EKC booklet sent to them by mail, and then some fraction will take one or more of the following actions:
  - Practice some of the recommended energy savings tips.
  - Redeem EKC coupons, bring the equipment back, and install the new energy saving devices. We estimate approximately 25-30%<sup>2</sup> of those that read the booklet will redeem EKC coupons. Some will use the direct mail coupons only, some will use in-store coupons only, and some will use both types of coupons to purchase the more efficient measures. Overall, we estimate that 1.5-3%<sup>3</sup> of all households will use the direct mail coupons. Evaluation contractor should try to confirm what fraction of customers that redeemed coupons did so because of direct mail, direct mail plus in store coupons, or simply random visit to store coupled with in store coupons being available.
- In Store coupons will yield the most sales of promoted products although the interaction between the call to action in the direct mail package and in store promotions is not well understood. Some customers will first encounter the EKC program in-store (rather than through the direct mail piece) and will redeem EKC coupons available in store, bring the equipment back, and install the new energy saving devices. We estimate that 80-90% of coupons redeemed in the program will be from in-store coupons (*note: this includes both customers aware of program before they came to the store based on booklet, as well as those that encounter the program in store coupons for first time*).
- Some customers will continue to purchase energy efficient products (e.g. CFL’s) after the campaign is over, at regular retail price.

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1 Spring campaign post-program survey – 44% recall receiving booklet; Fall campaign post-program survey – 46% recall receiving booklet.

2 Spring research – 25% of those that recall receiving booklet indicated that they used EKC coupons; Fall research – 31.9% of those that recall receiving booklet indicated that they used EKC coupons.

3 Spring 2006 – 79,608 DM coupons (1.7% of all households); Fall 2006 – 126,482 DM coupons (2.8% of all households).

**3) Impact on Customer Satisfaction**

Most customers will feel satisfied that they achieved some energy savings, saved money and/or or did something of value to improve the environment as a result of participating in the program.

**4) Impact on Product Suppliers**

Manufacturers and retailers will be motivated to work with the EKC programs because it will potentially generate more business and positive publicity for their stores. Some manufacturers and/or retailers will use their own resources to promote the campaign, such as in flyers and on their websites, and/or further discount the promoted products through in-store sales.

Retailers will increase their stock and/or shelf-space of the featured energy-saving devices because of the perceived increase in customer demand for the product. Retailers will pass the price discount amount from the coupon on to the customer in the form of a reduced total price for the product.

**5) Impact on Local Distribution Companies (LDCs)**

- LDCs will be willing to participate in the EKC program and more than 80 will participate as channel partners, providing OPA with customer mailing lists and logos for the mailing and co-branding of the direct mail brochure.
- The existence of an LRAM mechanism to compensate utilities for potential lost revenues from successful programs will reduce the LDC's unwillingness to participate in program promotion efforts
- Some LDCs will use their own resources to promote the campaign, including both in-kind support (e.g. answering customer calls about program) and actual dollar investments (e.g. by hosting local community events to promote program)

**6) Impact on Product Sales promoted by the program**

The promotion will result in increased sales of the energy efficient devices province wide due to the anticipated drop in the effective or final purchase price of the devices to the customer and the anticipated increase in customer satisfaction with the product.

## **C. Development of Evaluation Plan**

The Evaluation Contractor will be responsible for developing a Final Evaluation Plan to collect and analyse the required data and produce the information identified in Key Research Objectives described in Section D. The OPA will work cooperatively with the Evaluation Contractor to help gather the data and information necessary to properly evaluate the program. The OPA will also provide the Evaluation Contractor with the related market research that is already underway for EKC to ensure there is no duplication of research effort.

## D. Key Research Objectives

1. **Determine if the key elements of the program theory can be confirmed using a survey of a sample of participants, non-participants and retailers in the program.** The key elements of the program theory include: impact on suppliers; impact on LDC's; impact on sales; impact on customers; impact on customer satisfaction and impact on customer awareness.
2. **Determine the relative impact of various delivery/marketing tactics (e.g. direct mail booklet, community events) on the use of in-store coupons by customers and on increases in customers' awareness of energy saving tips and tools.** For example, are people more likely to recognize the in-store point of purchase materials and coupons after they've received the EKC brochure at home? Do they take their direct mail coupon into the store and then use additional in-store coupons in conjunction with the direct mail coupon? Does having an in-store event increase customers' awareness of the benefits and uses of the featured energy saving products?
3. **Review the prescriptive input assumptions used to estimate the program's energy savings, peak demand savings, and cost effectiveness and recommend revised values or suggestions for further research, if needed.** The EKC program includes prescriptive savings per participant for Energy Star® compact fluorescent light bulbs (CFLs), ENERGY STAR® ceiling fans, furnace/air-conditioner filter replacement, outdoor solar lights, motion detectors, and dimmer switches for incandescent bulbs.

A review of the prescriptive input assumptions requires examining the following information for each measure:

- Base case energy use of the product replaced by the coupon item selected
- Base case energy consumption, high-efficiency case energy consumption and derived energy savings
- Energy use profile (8 categories to consider – winter/summer peak, off-peak, and mid-peak, AND shoulder mid-peak and off-peak)
- Peak demand savings (summer/winter as applicable)
- Incremental cost (cost difference between implementing high efficiency case and base case)
- Estimated useful life of the equipment
- Free Rider rates as a function of the specific program design

An assessment of other factors such as geographic location (e.g. northern Ontario vs. southern Ontario) and any other factors that may result in significant differences that may require unique prescriptive input assumptions should also be included.

A review of the prescriptive input assumptions used for similar programs in other jurisdictions should also be undertaken as part of this requirement. Significant differences between the jurisdictions examined and Ontario (climate, behaviour, standards and regulations, etc.) should be identified. The final product of this assessment should be a list of each measure offered by the program, any recommended changes to the prescriptive input assumptions for each measure and a revised energy savings per unit estimate if there was sufficient evidence available to justify the revision. In addition the Evaluation Contractor should identify if there are any small research projects that could be undertaken to significantly reduce the uncertainty in these savings estimates. The estimated cost for these studies should not exceed \$50,000.

Each of the measures identified above have unique evaluation concerns that should be considered when reviewing the prescriptive input assumptions. The review of the CFL input assumptions should be considered as the primary evaluation concern by the Evaluation Contractor (this measure accounted for over 70% of the estimated savings in the 2006 program). A collection of potential concerns that should be considered in the evaluation are:

#### ENERGY STAR® CFLs

- How many CFLs were purchased using coupons? What percentage of the CFLs purchased with coupons were actually installed? What percentage of CFLs purchased with coupons and installed replaced existing CFLs?
- What are the typical/average operating hours of the CFLs installed? Does this vary by room location or fixture

#### ENERGY STAR® Ceiling Fans

- How many ENERGY STAR® ceiling fans were purchased using coupons? What percentage of the ceiling fans purchased with coupons were actually installed? What percentage of ceiling fans purchased with coupons and installed replaced existing ceiling fan?
- Where are the ceiling fans being installed (living rooms, bedrooms, etc.) and how does this impact the savings estimate?
- How do participants use the ceiling fan to achieve energy savings? For instance, what percentage of participants:
  - use the ceiling fan instead of an existing air conditioner
  - set forward their thermostat while operating the ceiling fan
  - do not have air conditioning but would have purchased a non Energy Star® rated ceiling fan without the program
  - do not have air conditioning and did not previously have a ceiling fan (will this add load?)
- Do the potential cooling benefits of the ceiling fan offset the additional power consumption and the subsequent additional heating load?
- Do they use a CFL in the ceiling fan?

### Furnace / AC Filter Replacement

- Does the type of furnace/AC fan motor (high/standard efficiency and variable, two-speed, or standard) have a significant impact on the savings estimate?
- Does the exclusion of fiberglass filters from the instant discount (coupon only applies to pleated fabric or electrostatic filters) have a significant impact on the savings estimate?
- Does the control strategy (fan only on when there is a call for heating or cooling OR on continuously in circulation mode when there is no call for heating or cooling) have a significant impact on the savings estimate?
- Is there an understanding of the impact of how a dirty filter uses energy and costs money and is there an understanding that the filter requires regular replacement all year round?

### Outdoor Solar Lights

- How many outdoor solar lights were purchased using coupons?
- What percentage of the solar lights purchased with coupons were actually installed?
- What percentage of outdoor solar lights purchased with coupons and installed replaced existing outdoor lights and where any of these existing solar outdoor lights also solar powered?
- What percentage of participants added outdoor lights where none were present before?
- If they were installing outdoor lights for first time, would they have purchased non-solar ones if not for our promotion?

### Motion Detectors

- How many motion detectors were purchased using coupons? What percentage of the motion detectors purchased with coupons were actually installed? What percentage of motion detectors purchased with coupons and installed replaced existing motion detectors?
- Where were the motion detectors installed (indoors/outdoors) and how does the location of the devices impact the savings estimates?
- How did the participants operate the lights being controlled by the motion detectors before the motion detectors were installed (e.g. on continuously, on only while in use, etc.)?

### Dimmers

- How many dimmers were purchased using coupons? What percentage of the dimmers purchased with coupons were actually installed? What percentage of dimmers purchased with coupons and installed replaced existing dimmers?

- Where are the dimmers being installed (living rooms, bedrooms, etc.) and how does this impact the savings estimate?
- How are the dimmers utilized once installed? What is the impact of the usage pattern?

Similar evaluation concerns will be identified for the Fall EKC products, once the featured products for that campaign have been finalized at the end of April 2007.

4. **Estimate the gross and net energy and peak demand savings resulting from the EKC Program activities. This estimate should be compared to the forecast of program savings and the reported program savings which will be estimated by coupon redemption totals.** Estimation of the net energy and peak demand savings resulting from the EKC Program activities requires an estimate of the percentage of program participants who can be classified as free riders. The free rider rate is a component of the prescriptive input assumptions. Free riders are defined as households who are likely to have invested in the energy efficiency measures promoted by the program without the stimulus of the program's advertising and coupons.
5. **Estimate the cost effectiveness of the program using the Total Resource Cost (TRC) test and the Program Administrator Cost (PAC) test.** The value or cost effectiveness of the program should be based on the Evaluation Contractor's estimate of net program savings and the OPA's reported program costs in accordance with the OEB's and OPA's guidelines on the TRC test. The OPA reserves the right to complete or have the Evaluation Contractor complete this task with a standardized tool.
6. **Estimate the environmental benefits of the program.** The EKC Program is expected to generate environmental benefits through the reduction of electricity consumption. The Evaluation Contractor should estimate the potential environmental benefits (Greenhouse Gas, NO<sub>x</sub>, and SO<sub>x</sub> emission reductions) resulting from the EKC activities as a function of anticipated or verified energy savings. The estimates should be expressed as annual and lifetime reductions as appropriate.

Based on the analysis above the Evaluation Contractor shall propose refinements to the program design to increase net savings achieved and improve overall cost effectiveness of future EKC programs.

## **E. Responsibilities for Data Collection To Support Program Tracking Functions and the Development of the Final Evaluation Plan**

The OPA will provide the Evaluation Contractor with access to the following data and information from the Spring 2006 and Fall 2006 EKC campaigns:

- Coupon redemption data – including coupon redemption numbers by product, by LDC, and by coupon distribution channel
- Call centre reports (including volumes and types of calls) and website activity reports
- Market research – including pre-program survey, post-program survey and customer focus groups
- Prescriptive input assumptions used to estimate the program's energy savings, peak demand savings, and cost effectiveness.
- Estimate of the cost effectiveness of the program using the Total Resource Cost (TRC) test
- Program summary reports and process reviews

The OPA will provide the Evaluation Contractor with access to the following data and information being developed by OPA and other contractors from the 2007 program

- Number of coupons redeemed – including breakdown by product, by LDC, and by coupon distribution channel
- Aggregated sales data from retailers/manufacturers
- Paid and earned media impressions
- Prescriptive input assumptions used to estimate the program's energy savings, peak demand savings, and cost effectiveness.
- Call centre reports (including volumes and types of calls) and website activity reports

The OPA will also provide the Evaluation Contractor with access to data collected through OPA's weekly online market research survey. The survey will cover all of OPA's mass market programs and will run for 32 weeks starting April 9<sup>th</sup>. Information to be collected specifically in reference to EKC program includes:

- Recall of EKC program and program elements (e.g. direct mail brochure, radio ads, print ads, coupons)
- Participation in EKC program – including undertaking behavioural activities and/or redeeming coupons
- Base-case for product redeemers (e.g. are people that redeem CFL coupon replacing an old CFL or an incandescent)
- Estimates of the proportion of customers who might have purchased the more efficient products in the absence of the program based on survey responses

## **F. Schedule of Evaluation Deliverables**

- June 1<sup>st</sup> – Evaluation Contractor starts work
- June 15<sup>th</sup> - Final Evaluation Plan due
- August 15<sup>th</sup> – Interim Progress report on research objectives 1-2
- September 15<sup>th</sup>- Final report on Spring campaign objectives 1-2, interim on objectives 3-6
- February 15<sup>th</sup> Final report - Covering all 6 research objectives.

## **G. Project and Program Tracking**

The Evaluation Contractor and OPA contract manager will meet with each participating LDCs to determine what data is being tracked as part of the normal program tracking operation and what additional data will need to be collected to provide answer for each of the research objectives.

# 2007 SUMMER SAVINGS DRAFT EVALUATION PLAN

## A. Description and Objectives

The Summer Savings program will build awareness of Ontario's growing summer electricity requirements and the need for conservation during these warm months when air conditioning use dramatically increases the demand for electricity. The program offers a financial incentive for consumers to reduce their electricity use from June to August.

The Summer Savings program seeks to engage residential customers to reduce electricity consumption by 10 percent compared with their consumption in 2006, between July 1 and August 31<sup>st</sup>. If this reduction is achieved, consumers will receive a credit of 10 percent of their summer electricity bill costs on their September or next bill.

This program is to be delivered by Local Distribution Companies (LDCs) across Ontario. Customers' electricity consumption during the summer three-month period will be compared to their 2006 consumption and uniformly corrected for variations in the weather. Those who reduce their consumption by 10 percent will automatically qualify for the 10-percent credit. No customer sign-ups are required.

The OPA will provide the necessary weather correction factors to be applied to both the 2007 consumption and the baseline 2006 consumption.

The objectives of the Summer Savings Program are to:

- Stimulate at least 20% of the eligible Residential Customers in Ontario to reduce their electricity consumption by at least 10% during the Summer Program Season,
- Achieve a province-wide savings of 2% reduction in residential usage during the Program Season( July 1<sup>st</sup> to August 31<sup>st</sup>, 2007),
- Contribute to the culture of conservation by increasing awareness of the link between taking conservation actions and a corresponding reduction in summer energy bills, and
- Save roughly 146 GWH in energy savings and 46 MW of peak savings if the forecast of 20% participation is realized.

## B. Program Theory

Roughly 50% of the province's utilities will sign up to administer the Summer Savings Program after strong recruitment efforts from the government and the OPA in the spring of 2007. The OPA will work with key LDCs to develop a combined media and advertising "Summer Savings" campaign to reach residential customers and provide tips on how to reduce usage. This marketing campaign will motivate roughly 12% of the eligible single family residential customers to take actions to reduce their usage by at least 10%. Customers will be motivated to join by the prospect of receiving a 10% cash reduction on their next bill (after the September bill) and or by the OPA's campaign designed to encourage customers to take actions for environmental or social reasons.

At least 20% of the eligible customers will be exposed to at least some form of energy savings tips delivered in this campaign either as a brochure or a visit to a website or by making contact with call center. This will lead at least 2% of all customers to seek out and participate in other residential programs offering conservation or efficiency services.

### **C. Development of Evaluation Plan**

The Evaluation Contractor will be responsible for developing a Final Evaluation Plan to collect the required data and produce the information identified in Key Research Objectives described in Section D. The LDC Program Administrator is obligated to work cooperatively with the Evaluation Contractor to provide the data and information necessary to properly evaluate the program which may include customer contact data when on site visits or contact are required.

### **D. Key Research Objectives**

**1. Validate the number and geographic distribution of participants that qualified for the 10% bill credit in the Summer Savings program.** LDCs have been given a method for estimating what fraction of the qualified residential population will qualify for the 10% bill credit based on weather adjusted usage between the summer months of 2006 and 2007. The Evaluation Contractor will be asked to verify these calculations from a sample of participating LDCs. The Evaluation Contractor will work with all participating LDCs to report the number and fraction of customers that qualified for the 10% credit province wide. The Evaluation Contractor will also be responsible for verifying the net energy savings achieved by the program by applying the same weather adjusted usage equations to all qualifying customers in the province. The Evaluation Contractor will also be responsible for displaying the location and number of qualifying households by geographic region: Eastern, Southern, Western and Northern Ontario and by LDC service area.

**2. Determine to what extent the Summer Savings program increased general customer awareness of the actions or conservation behaviours available to their household to reduce overall energy use during weekday summer afternoons.** Determine if the summer savings program also led to changes in customer willingness to invest in energy efficiency or change their behaviours and their knowledge of how to obtain or purchase energy efficiency measures promoted by the program. This can be accomplished using surveys of the population qualified to participate in the program.

**3. Determine what actions or behaviours qualifying customers report they took in their household to achieve energy savings as a result of this program and compare this to reported actions taken by customers who did not qualify for the summer savings credit.** This can be accomplished using surveys of the general population and then matching responses to that fraction of the population that qualified. The surveys should also identify what fraction of the qualifying population was aware of

the Summer Savings or EKC programs and what actions if any they report to have taken to qualify for the Summer Savings program. The Evaluation Contractor will be responsible for proposing a method to validate or confirm any self reported changes in behaviour or “energy savings” actions taken in response to the program. The Evaluation Contractor should also consider savings resulting from actions taken by the general population that were aware of the program and had attempted to implement measures to qualify for the credit yet failed to achieve the required 10% savings level.

**4. Estimate the gross and net energy savings from the program.** The energy savings from the program should be determined by examining the consumption changes for ALL of the eligible population and constructing a table that shows the percentage of customers that reduced consumption during the target period. The estimation of energy savings from the program should factor in the fraction of customers who would have qualified in the absence of the program for the credit (the natural qualifying rate) and results from surveys of program awareness among qualifiers. The gross and net energy savings should be reported for each LDC, individually, and for the entire program i.e. for the entire province. The Evaluation Contractor’s estimate of verified program savings should be compared to both the forecast of energy savings and peak demand savings and the reported level of savings.

**5. Determine the percentage of electricity savings (and demand savings if applicable) from the Summer Savings program that are also being accounted for or counted by other OPA and LDC CDM programs or Natural Gas Utility DSM programs.** Electricity savings that are tracked by the Summer Savings Program may be a result of other OPA programs (for example the Every Kilowatt Counts Program or programs that are tracked by rate-regulated entities). To avoid double counting savings, an estimation of the percentage of savings that are not accounted for by other OPA programs must be determined. This may be accomplished by cross-referencing a statistically valid sample of participants from other programs with the Summer Savings Program participant list and estimating the contribution of savings from the other programs to the apparent Summer Savings Program energy savings estimated using the method described above.

**6. Determine what form of rewards or reinforcement customers would prefer if the Summer Savings program is continued in 2008 (e.g., cash incentives, energy savings measures, contributions to charity, recognition in neighbourhood, etc.).**

**7. Estimate the cost effectiveness of the program using the Total Resource Cost (TRC) test and other tests.** Estimates of program cost effectiveness should include, but not necessarily restricted to, the following elements:

- a. The value or cost effectiveness of the program based on the Evaluation Contractor’s estimate of net program energy savings and peak demand savings and the LDC’s reported program costs in accordance with the OEB’s and OPA’s guidelines on the TRC test.

- b. The estimated administered benefit / cost ratio (which includes incentives) for the entire province.
- c. The estimated net resource benefits - \$ million and the estimated levelized cost of the program –cents / kWh (requires discount rate, useful life in yrs and program costs to calculate) for the entire province.

**8. The estimated environmental benefits of the program.** The Summer Savings program is expected to generate environmental benefits through the reduction of electricity and other energy resource consumption. The Evaluation Contractor should estimate the potential environmental benefits (Greenhouse Gas, NO<sub>x</sub>, and SO<sub>x</sub> emission reductions) resulting from Summer Savings program activities. The estimates should be expressed as annual and lifetime reductions.

## **E. Responsibilities for Data Collection To Support Program Tracking Functions and the Development of the Final Evaluation Plan**

### **Evaluation Contractor**

The Evaluation Contractor will be responsible for the development of the Final Evaluation Plan that will incorporate the Key Research Objectives in Section D and a review of all tracked and reported values (e.g. participants, program expenditures, etc.).

In addition to the data collection performed by the LDC Program Administrator to track program progress, the Evaluation Contractor may need to collect additional data to satisfy the Key Research Objectives and provide an overall evaluation of the program's load impacts and cost effectiveness.

The Final Evaluation Plan will include the proposed method to satisfy the Key Research Objectives and all sampling designs that will be used to ensure results are representative and free from bias. This plan will be the first deliverable from the evaluation contractor and is due within 30 days of signing the evaluation contract.

### **LDC Program Administrator**

The LDC Program Administrator will be responsible for the collection of the relevant building and customer information and will provide all data needed by the Evaluation Consultant to complete an independent financial audit of program expenditures. The LDC Program Administrator is expected to cooperate with the Evaluation Contractor in gathering the data needed to evaluate the program and satisfy the Key Research Objectives defined in Section D. A partial list of data required for collection by the LDC Program Administrator during program operations is provided in the following:

- Residential participant energy bills for all of 2006 and all of 2007 for qualifying customer analysis (restricted to homes with a single meter only).
- Number of customer inquiries related to actions to be taken to qualify for 10% savings (could be on website or available at call centers).

- Customer contact information for all qualifying customers including address, phone and email if available.
- Any awareness tracking data collected at local or provincial level.

The full list will be completed after the Final Evaluation Plan is completed by the Evaluation Contractor.

## **OPA**

The OPA will be responsible for managing both the LDC Program Administrator implementation efforts and the Evaluation Contractor. OPA will provide the Evaluation contractor with contact information for each LDC program administrator that has agreed to participate in the Summer Savings Program.

## **F. Schedule of Evaluation Deliverables**

The timing requirement for the evaluation deliverables is as follows:

- June 1 – Contractor starts work
- June 15<sup>th</sup> - Final Evaluation Plan due
- September 15<sup>th</sup>- Interim report on research objectives 2 and 3
- December 14<sup>th</sup> - Interim report on research objectives 1, 4, 5, 6, 7, and 8
- March 15<sup>th</sup> Final report - Covering all 8 research objectives

## **G. Project and Program Tracking.**

The Evaluation Contractor and the OPA contract manager will meet with each participating LDC to determine what data is being tracked as part of the normal program tracking operation and what data is being gathered to assist in the comparisons of customer summer billing data from the summer of 2006 and 2007.