Experience from Utility Sponsored Conservation Programs

ورشة عمل حول
الخطة الوطنية لتحسين كفاء استخدام الطاقة في مصر - تنسيق الجهود
14 & 15 أبريل 2016
العين السخنة - مصر
Contents

- Relevant context within the province of Ontario
- **Territorial targets based on achievable potential studies.**
- Top-down approach in setting provincial targets
- Cost effectiveness tests for launching pilots and designing specific programs and initiatives
- The Measurement and Verification (M&V) methodologies and assumptions used for the bottom-up verifications of the savings are presented.
- The evaluation and reporting of program results at the utility level and the province levels
3 Levels of Government in Canada

Federal

Provincial Government

Municipal Government

Toronto is the fourth-largest city in North America behind Mexico City, New York, and Los Angeles.
Electricity within the province of Ontario

Ontario Hydro 1906-1998 vertically integrated government owned utility

- Electricity Act, 1998
- Ontario Power Generation
- Hydro One
- Electrical Safety Authority
- Ontario Electricity Financial Corporation
- IESO
- OEB

79 utilities (City owned LDCs)

The Ministry creates energy policy to make sure that:

• The energy sector is efficient and competitive.
• The industry is environmentally sustainable.
• There is a safe and reliable energy supply.
• The rights of consumers are protected.
Rules, Policy Licenses & Rates

Medium & Long Term Planning

Interconnection
Manitoba, Michigan, Minnesota, NY & Quebec

Market Operator

Conservation

Demand Response
Current Supply Mix
Ontario's installed generation capacity totals 35,163 MW

Ontario Power Generation (OPG) and independent power producers.

Long-term PPAs with the IESO or the Ontario Electricity Financial Corporation (OEFC).

The revenues of these generators are paid through the wholesale market and the difference between the wholesale price and the guaranteed payment set in their contracts is settled through the global adjustment.
Residential

Help your budget and the environment—run your dryer during off-peak periods.

- **Summer (May 1 - October 31)**
  - Weekdays
  - Power: 17.5¢ per kWh

- **Weekends and Statutory Holidays**
  - Power: 12.8¢ per kWh

- **Winter (November 1 - April 30)**
  - Weekdays
  - Power: 8.3¢ per kWh

For current TOU pricing, please go to www.ontarioenergyboard.ca
Business Account – Class B Customers

1. General Service: Monthly demand of 50 kW to 999 kW
2. General Service: Monthly demand of 1000 kW to 4999 kW

- Electricity 5.46%
- Global Adjustment 59.02%
- Toronto Hydro Distribution 8.40%
- Hydro One Transmission 5.98%
- IESO Charges 4.41%
- OEFC 5.22%
- HST 11.50%
Electricity kWh cost for Class B customers

![Bar chart showing kWh cost for different months with categories for Spot Market and Global Adjustment]
1. General Service: Monthly demand of above 5000 kW

- **Electricity**: 11.26%
- **Toronto Hydro Distribution**: 19.82%
- **Hydro One Transmission**: 19.48%
- **IESO Charges**: 4.35%
- **OEFC**: 5.25%
- **HST**: 11.51%
- **Global Adjustment**: 28.33%
Global Adjustment

Is the difference between market price and the rates paid to regulated and contracted generators and for conservation and demand management programs...

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>GA-OEFC-NUG (M$) - Old Contracts</th>
<th>GA-OPG (M$) – baseload contracts</th>
<th>GA-OPA (M$) for CDM</th>
<th>Total GA (M$)</th>
<th>Total</th>
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<td>608.5</td>
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<td>555</td>
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<td></td>
<td>Apr</td>
<td>90.1</td>
<td>136</td>
<td>388</td>
<td>615</td>
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<td></td>
<td>May</td>
<td>90.7</td>
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<td>411</td>
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<td></td>
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<td></td>
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<td>139</td>
<td>391</td>
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<td>Aug</td>
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<td></td>
<td>Sept</td>
<td>86.1</td>
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<td>99.1</td>
<td>157</td>
<td>378</td>
<td>634</td>
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<td></td>
<td>Nov</td>
<td>112</td>
<td>197</td>
<td>538</td>
<td>847</td>
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<td></td>
<td>Dec</td>
<td>88.9</td>
<td>118</td>
<td>385</td>
<td>592</td>
<td></td>
</tr>
</tbody>
</table>

Source: Independent Electricity System Operation (IESO), Ontario Power Authority (OPA)
Ontario CDM policy framework

In Ontario, the CDM policy framework consists of:
• legislation, التشريعات
• regulations, اللوائح
• CDM targets, أهداف
• and strategic direction, توجيهات

Outlined in such documents as:
• the Ministry of Energy’s Long Term Plan,
• and Ministerial directives,
• as well as the OEB’s CDM Code,
• and the OPA’s Master Agreements and EM&V protocols.

The CDM policy framework exists to determine:
• who does what,
• how activities are funded,
• how the responsible agencies decide what to do,
• and how they measure their performance.
• The framework also determines the roles of the various stakeholders in designing the framework itself,
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Forecasted conservation through programs and improved standards is expected to offset almost all of the growth in electricity demand and a substantial portion of peak demand to 2032.
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Top-down approach in setting CDM targets

On March 31, 2010, the Minister issued a directive to the OEB, instructing it to establish:

- mandatory CDM Targets for LDCs to achieve reductions in electricity consumption and reductions in peak provincial electricity demand over a four year period beginning January 1, 2011 (the “CDM Targets”).

- That directive specified that the total of the CDM Targets established for all LDCs be equal to 1,330 megawatts (MW) of provincial peak electricity demand and 6,000 gigawatt hours (GWh) of electricity consumption over that four-year period (“LDC Provincial Aggregate Targets”).
Advise on assigning CDM Targets to LDCs

June 21, 2010

Advice to the Ontario Energy Board:
CDM Target Allocation for Ontario LDCs
The purpose of this Code is to set out the obligations and requirements that licensed distributors must comply with in relation to the CDM Targets set out in their licences.

This Code also sets out the conditions and rules that licensed distributors are required to follow.
Assignment of CDM Targets to LDC by OEB

DATED at Toronto, March 14, 2011
ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998, S.O. 1998, c.15, (Schedule B);


AND IN THE MATTER OF a proceeding under section 74 of the Ontario Energy Board Act, 1998 amending all electricity distributor licences.

BEFORE: Maikla Hare
Presiding Member
Karen Taylor
Board Member

DECISION AND ORDER

Background

Section 27.1 of the Ontario Energy Board Act, 1998 (the “Act”) states that the Minister of Energy and Infrastructure (the “Minister”) may issue, and the Board shall implement, directives that have been approved by the Lieutenant Governor in Council that require the Board to take steps specified in the directives to promote energy conservation, energy efficiency, load management or the use of cleaner energy sources, including alternative and renewable energy sources.”

<table>
<thead>
<tr>
<th>#</th>
<th>License Name</th>
<th>2014 Net Annual Peak Demand Savings (MW)</th>
<th>Target</th>
<th>2011-2014 Net Cumulative Energy Savings (GWh)</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Hydro One Brampton Networks Inc.</td>
<td>45,610</td>
<td>46,950</td>
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<td>Hydro Ottawa Limited</td>
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<td>Midland Power Utility Corporation</td>
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<td>Niagara-on-the-Lake Hydro Inc.</td>
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<td>Norfolk Power Distribution Inc.</td>
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<td>Orangeville Hydro Limited</td>
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<td>Onilka Power Distribution Corporation</td>
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<td>Parry Sound Power Corporation</td>
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<td>Peterborough Distribution Incorporated</td>
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<td>Port Colborne Hydro Inc.</td>
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<td>PowerStream Inc.</td>
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<td>Rentfew Hydro Inc.</td>
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<td>Rokea St. Lawrence Distribution Inc.</td>
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<td>67</td>
<td>Sioux Lookout Hydro Inc.</td>
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<td>68</td>
<td>St. Thomas Energy Inc.</td>
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<td>Tillsonburg Hydro Inc.</td>
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<td>Toronto Hydro-Electric System Limited</td>
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<td>72</td>
<td>Verdian Connections Inc.</td>
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<td>Wellington North Power Inc.</td>
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</table>
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## Cost Effectiveness Tests

<table>
<thead>
<tr>
<th>Metric</th>
<th>Key Question Answered</th>
<th>Summary Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Resource Cost (TRC) test</td>
<td>How will the total costs of energy and demand in the utility service territory be affected?</td>
<td>Compares the costs incurred to design and deliver programs and customers’ costs with avoided electricity and other supply-side resource costs (e.g., generation, transmission, natural gas, etc.)</td>
</tr>
<tr>
<td>Societal Cost (SC) Test</td>
<td>Is the utility, state or nation better off as a whole?</td>
<td>Identical to TRC approach, but also includes the cost of “externalities” (e.g., carbon emissions, health costs, etc.)</td>
</tr>
<tr>
<td>Program Administrator Cost (PAC) Test</td>
<td>How will utility costs be affected?</td>
<td>Compares the costs incurred to design and deliver programs by the program administrator with avoided electricity supply-side resource costs</td>
</tr>
<tr>
<td>Ratepayer Impact Measure (RIM) Test</td>
<td>How will utility rates be affected?</td>
<td>Compares administrator costs and utility bill reductions with avoided electricity and other supply-side resource costs</td>
</tr>
<tr>
<td>Participant Cost (PC) Test</td>
<td>Will the participant benefit over the measure life?</td>
<td>Compares costs and benefits of the customer installing the measure</td>
</tr>
<tr>
<td>Levelized Delivery Cost (LC)</td>
<td>What is the per-unit cost to the utility?</td>
<td>Normalizes the costs incurred to design and deliver programs per unit saved (i.e., peak demand or energy savings)</td>
</tr>
</tbody>
</table>
Master Agreements
saveONenergy Residential Conservation Programs

**peaksaver PLUS®**

Free in-home energy display
If you have central air, an electric water heater or swimming pool pump, sign up for *peaksaver PLUS®* and get a FREE in-home energy display.

**COUPON EVENT**

Available until December 31, 2013 – Here’s an instant way to make your home more energy efficient. Visit participating retailers for in-store coupons, LEDs, CFLs, dimmers, thermostats and much more!

**HEATING AND COOLING INCENTIVE**

$650 Heating and cooling rebate
Install a qualifying ENERGY STAR central heating and cooling system and receive a rebate of up to $650.

**FRIDGE & FREEZER PICKUP**

Save up to $125 a year
Got an old fridge or freezer you don’t need? Call us for a FREE pickup and start saving on your electricity costs.

**NEW HOME CONSTRUCTION**

Buying a new home?
When you are shopping for a new home, make energy efficiency a priority and save on your annual electricity costs.
• **Funding to install high-efficiency equipment & control systems**
  - Cover up to 50% or project costs
  - $800/kW or $0.10/kWh (non-lighting)
  - $400/kW or $0.05/kWh (lighting)

**Prescriptive**
Prescriptive Track applications are ideal for quick system upgrades.

**Engineered**
Engineered Track applications are for more complex equipment upgrades and provide the potential for higher incentives.

**Custom**
Custom track applications provide flexibility for more comprehensive projects with opportunities for increased energy savings.
Register
Both customer and 3rd Party register at www.saveonenergy.ca/

Submit application to the OPA
Customer submits application/ assigns a 3rd party
Agree on M&V method with LDC beforehand (larger projects)

OPA routes application to LDC for Review/Approval
May require a pre-project site visit

Customer Receives Pre-Approval from LDC
Customer Implements Project
Submits post-project documents to LDC

LDC Post Project Review and Approval
May require a post project site visit

Customer submits invoice to LDC

LDC submits to the OPA for settlement
OPA pays LDC and LDC pays customer
Energy managers are trained to:

- find energy savings,
- identify smart energy investments,
- secure financial incentives,
- and unleash competitive advantage.

**Embedded Energy Managers**
Are and add on hired by large facilities with salary subsidized from the distribution company to meet agreed on electricity savings and demand reduction.

**Roving Energy Manager**
Are hired by the Electricity Distribution companies and assigned to many sites.

Both have to Certified Energy Managers with reporting requirements such as:
- Annual CDM plan,
- Quarterly reports.
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International Performance Measurement and Verification Protocol (IPMVP)


- General procedures to achieve reliable and cost-effective determination of savings
- Applicable to energy or water efficiency projects in buildings and industrial plants

<table>
<thead>
<tr>
<th>M&amp;V Option</th>
<th>How savings are calculated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option A:</strong> Based on measured equipment performance, measured or stipulated operational factors, and annual verification of “potential to perform.”</td>
<td>Engineering calculations.</td>
</tr>
<tr>
<td><strong>Option B:</strong> Based on periodic or continuous measurements taken throughout the term of the contract at the device or system level.</td>
<td>Engineering calculations using measured data.</td>
</tr>
<tr>
<td><strong>Option C:</strong> Based on whole-building or facility level utility meter or sub-metered data adjusted for weather and/or other factors.</td>
<td>Analysis of utility meter data.</td>
</tr>
<tr>
<td><strong>Option D:</strong> Based on computer simulation of building or process; simulation is calibrated with measured data.</td>
<td>Comparing different models.</td>
</tr>
</tbody>
</table>

Options A and B are **retrofit-isolation methods**
Options C and D are **whole-facility methods**
The difference is where the boundary lines are drawn.
saveONenergy Project Level M&V and QA/QC Requirements

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Criteria</th>
<th>Method</th>
<th>Pre/Post Visit</th>
<th>M and V Plan Required</th>
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<tbody>
<tr>
<td>Large Project</td>
<td>Including only Prescriptive and/or Engineered measures with incentives &gt;$20K</td>
<td>Not applicable</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Large Project</td>
<td>Including “Custom Measures” with incentives &gt; $10K and &lt; $25K</td>
<td>Basic</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Large Custom</td>
<td>Including custom measures &gt; $25K</td>
<td>Enhanced</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Other</td>
<td>Not defined above (i.e. small projects)</td>
<td>Not applicable</td>
<td>Statistical Sampling</td>
<td>No</td>
</tr>
</tbody>
</table>
saveONenergy Measure Type M&V Requirements

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Basic</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting Retrofit</td>
<td>LR-B</td>
<td>LR-E</td>
</tr>
<tr>
<td>Equipment Replacement</td>
<td></td>
<td>ER-E</td>
</tr>
<tr>
<td>HVAC Redesign</td>
<td></td>
<td>HVAC-E</td>
</tr>
<tr>
<td>Variable Speed Drives</td>
<td>VSD-B</td>
<td>VSD-E</td>
</tr>
<tr>
<td>BAS</td>
<td>BAS-B</td>
<td>BAS-E</td>
</tr>
<tr>
<td>Lighting Controls</td>
<td>LC-B</td>
<td>LC-E</td>
</tr>
<tr>
<td>Sub-metering</td>
<td></td>
<td>SM-E</td>
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<tr>
<td>Elevator Retrofit</td>
<td></td>
<td>ELR-E</td>
</tr>
<tr>
<td>Building Envelope</td>
<td>BE-B</td>
<td>BE-E</td>
</tr>
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</table>
saveONenergy M&V

Fan System Demand Reduction Through CDM Initiative

Monthly Consumption vs CDD

\[ y = 899.39x + 579719 \]
\[ R^2 = 0.7944 \]
After the Incentive Cheque

- Programs are independently evaluated
- Evaluation determines net to gross ratios
- LDC Target
Contents

- Relevant context within the province of Ontario
- Territorial targets based on achievable potential studies.
- Top-down approach in setting provincial targets
- Cost effectiveness tests for launching pilots and designing specific programs and initiatives
- The Measurement and Verification (M&V) methodologies and assumptions used for the bottom-up verifications of the savings are presented.
- The evaluation and reporting of program results at the utility level and the province levels
Reporting and evaluation
LDC Quarterly and Annual reports

Conservation and Demand Management
2014 Annual Report

Submitted to:
Ontario Energy Board

Submitted on September 30, 2015
OPA Annual reports

Cost-Effectiveness Evaluation

The OPA’s cost-effectiveness evaluations are used to identify the value of conservation for Ontario. Cost effectiveness is calculated using a range of standard industry benefit-cost analyses and metrics. The tests evaluate the cost-effectiveness of the save/energy programs delivered by the OPA and LDCs. A more detailed explanation of these tests can be found in Appendix C.

<table>
<thead>
<tr>
<th>2012 Total Resource Cost Test</th>
<th>2013</th>
<th>2011-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit ($ millions)</td>
<td>633</td>
<td>1420</td>
</tr>
<tr>
<td>Cost ($ millions)</td>
<td>461</td>
<td>1150</td>
</tr>
<tr>
<td>Net Benefit ($ millions)</td>
<td>172</td>
<td>238</td>
</tr>
<tr>
<td>Net Benefit Ratio</td>
<td>1.22</td>
<td>1.20</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2012 Program Administrator Cost Test</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit ($ millions)</td>
<td>506</td>
<td>1452</td>
</tr>
<tr>
<td>Cost ($ millions)</td>
<td>334</td>
<td>711</td>
</tr>
<tr>
<td>Net Benefit ($ millions)</td>
<td>234</td>
<td>741</td>
</tr>
<tr>
<td>Net Benefit Ratio</td>
<td>1.76</td>
<td>2.04</td>
</tr>
<tr>
<td>Levelized Delivery Cost (Demand Response)</td>
<td>9.368</td>
<td>12.04</td>
</tr>
<tr>
<td>Levelized Delivery Cost (Energy Efficiency)</td>
<td>44.9/MWh (4.49/kWh)</td>
<td>37.5/MWh (3.76/kWh)</td>
</tr>
</tbody>
</table>
Conservation and Demand Management
Report – 2013 Results
EB-2010-0215

Date: December 17, 2014

OEB Annual Reports
CDM Framework 2011-2014 Results

In Total the 4 year (2011- 2014) suite of saveONenergy program achieved:

• 6,553 gigawatt-hours (GWh) of energy savings,

• and 928 megawatts (MW) of demand reduction,

• at a total cost of 4 cents/kWh in comparison to 8 cents for additional capacity

• For each dollar invested in end users being more efficient, two dollars are saved in avoided generation.
Moving Forward

Third Tranche
- 2005-2007
  - OEB oversees conservation programs delivered by electricity distributors
  - Programs delivered in a fragmented way
  - Costs recovered from distribution rates

Agency Coordination
- 2008-2010
  - OPA responsible for organizing and funding conservation programs
  - Programs delivered by 3rd parties, including some distributors

CDM Framework
- 2011-2014
  - Targets of 1,330 MW and 6,000 GWh savings by 2014 established
  - LDCs the face of conservation and deliver electricity conservation programs as a condition of licence
  - OPA designs, approves and funds programs in coordination with LDCs
  - OEB oversees local programs funded through distribution rates

Conservation First
- 2015-2020
  - Target of 7TWh by the end of 2020 established
  - LDCs to deliver conservation programs to each customer segment
  - LDCs provided with long term stable funding, more accountability for program development
  - Customers will be given more CDM program choice along with streamlined oversight and administration
Conservation First White Paper

Purpose

• On July 16, 2013, Conservation First put forward a consultation document with a renewed vision for conservation in Ontario and committed to expanding and enhancing its conservation efforts.

Vision

• **Putting Conservation First** before building new generation and transmission facilities, where cost effective.
• **Inspiring Action** by better aligning consumer awareness of the benefits of conservation with tools.
• **Providing Different Tools for Different Customers**, tailoring tools to the needs of different customers.
• **Encouraging Innovation** to better support local needs.
• **Leading by Example** with the Ontario government as well as the broader public sector continuing to play a leadership role in conservation efforts.
Context for Action: Ontario’s Long-Term Energy Plan


- The 2013 plan is built around five key principles:
  1. Cost-effectiveness
  2. Reliability
  3. Clean energy
  4. Community engagement and
  5. Putting conservation first
Conservation In Ontario's Long Term Energy Plan

• Conservation will be the first resource considered before building expensive new generation and transmission facilities, wherever cost-effective.

• Ontario has established a conservation target of 30 terawatt hours (TWh) by 2032.

• Ontario will aim to meet 10% of its peak demand through demand response initiatives by 2025.

• Conservation and demand management provides multiple benefits to Ontarians, including:
  – Helping Ontario families and businesses save money on their energy bills
  – Reducing the need to build expensive generation and transmission, mitigating upward pressure on electricity prices
  – Growing the economy and creating jobs
  – Reducing greenhouse gas emissions and air pollution
Conservation Policy

- Ontario’s policy is to consider conservation before new supply where cost effective.
- The province’s Demand Response goal to reduce 10% of peak summer demand by 2025 (~2,400 MW) will be achieved through Dispatchable loads, Time Of Use and other price response initiatives. Existing DR is also being transitioned from an OPA program approach to a IESO market based approach.
- Moving forward, LDCs will be required to deliver conservation to each customer segment as a condition of license.
- Distributors will be encouraged to work together within 21 regions, aggregating targets and co-operatively developing regional CDM plans.
- Lost revenues that result from conservation programs will not act as a disincentive to Distributors.
- The DSM framework will enable the achievement of all cost-effective DSM and more closely align DSM efforts with CDM efforts.
Other Ministry Conservation Policy Initiatives
Product Efficiency Standards

- Energy efficiency regulations are a widely-used tool to set minimum energy performance standards for energy using products to remove the least efficient products from the market.
- Ontario has been regulating the energy efficiency of products and appliances since 1988.
- The ministry committed to helping consumers choose the most efficient products for their homes and businesses by showing leadership in establishing minimum efficiency requirements for products.
- The most recent major amendment to Ontario’s energy efficiency regulation, O. Reg. 404/12, which set or enhance the minimum efficiency standards for 25 products (such as water heaters, boilers, household refrigerators, dishwashers, clothes washers and dryers, televisions, fluorescent lamps and small motors) that became effective on January 1, 2014 positioned Ontario as a leader in regulating energy efficiency of products and appliances.
- Ontario regulates more products than any other jurisdiction in Canada (including the federal government) and has the most stringent efficiency standards for a number of products, such as residential appliances (refrigerators, clothes washers/dryers, dishwashers, room ACs), lighting products (fluorescent lamps and ballasts, general service lighting) and some of HVAC and water heating products.
Broader Public Sector Reporting And Conservation Plans

• A key conservation initiative that will assist Ontario in achieving its conservation goals is the energy reporting and conservation plan regulation (O. Reg. 397/11) developed under the Green Energy Act, 2009.
• O. Reg. 397/11 requires broader public sector (BPS) organizations to:
  o Report by July 1st annually to the Minister on their energy use and greenhouse gas (GHG) emissions beginning on July 1st, 2013
  o Develop and publish a 5-year conservation and demand management (CDM) plan every 5 years beginning July 1st, 2014
  o Make their annual reports and conservation and demand management plans publicly available on their websites
• Roughly 720 BPS organizations report annual consumption of all fuel types for over 20 operation types which are converted to an energy and GHG intensity figure. Reports are made public by each organization and the Ministry makes all data available on the Ontario One data web site.
• Last year compliance rate was 95%
Municipal Energy Plan Program

• The Municipal Energy Plan (MEP) program was launched in August 2013 to support municipalities’ efforts to better understand their local energy needs, identify opportunities for energy efficiency and clean energy, and develop plans to meet their goals.

• A MEP is a comprehensive plan designed to align energy, the built environment and land use planning to identify community-wide energy efficiency options and support economic development opportunities. MEPs will help municipalities:
  – Assess the community’s energy use and greenhouse gas (GHG) emissions
  – Identify opportunities to conserve, improve energy efficiency and reduce GHG emissions
  – Consider impact of future growth and options for local clean energy generation
  – Support local economic development.

• The MEP Program provides successful applicants with funding for 50 per cent of eligible costs, up to a maximum of $90,000 to develop a municipal energy plan.

• The ministry has completed its first round of MEPs applications with 8 successful applications and just launched a second window for applications.
Thank you

Ammar Al-Taher Ammar.altaher@rcreee.org