

How Ontario is Putting Conservation First

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September 2015

Presented at the 2015 ACEEE National Conference on Energy Efficiency as a Resource

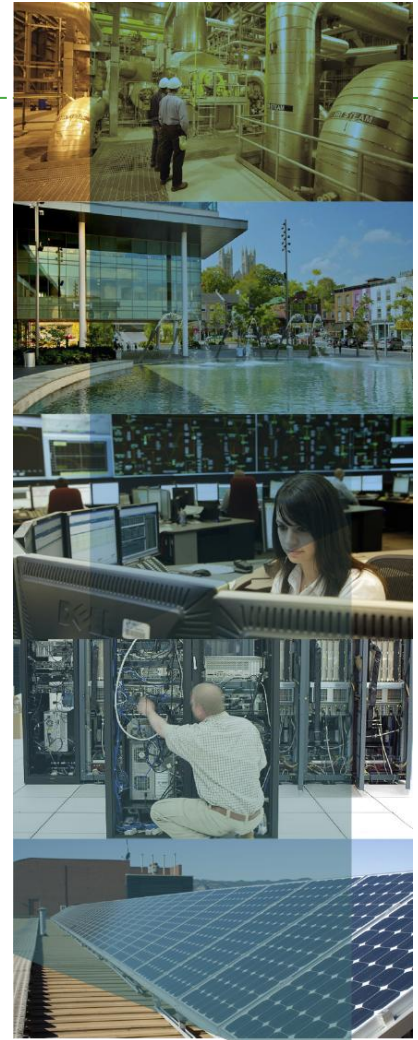
Overview of Presentation

- Origins of Conservation First Framework (CFF)
 - Conservation in Ontario and new policies
- Approach to design and develop CFF
 - Unique considerations of framework
- Implementation
 - Challenges and opportunities

IESO at a Glance

The Independent Electricity System Operator (IESO) works at the heart of Ontario's power system – ensuring there is enough power to meet the province's energy needs in real time while also planning and securing energy for the future. It does this by:

- **Balancing** supply and demand
- **Securing** clean sources of supply
- **Planning** medium and long term
- **Overseeing** the electricity wholesale market
- **Fostering** culture of conservation [saveONenergy](#)



Ontario at a Glance

Local Distribution Companies	73
Installed Capacity	34,367 MW
Record Summer Peak	27,005 MW (August 1, 2006)
Record Winter Peak	24,979 MW (Dec 20, 2004)
Total Annual Energy Consumed	139.8 TWh (2014)
Customers	4.9 million
Transmission Lines	30,000 km (18,600 miles)
Interconnections	New York, Quebec, Manitoba, Michigan, Minnesota



The IESO is the reliability coordinator for Ontario and works closely with other jurisdictions to ensure energy adequacy across North America.

Building the Culture of Conservation

Pre-2011 Conservation	2011-2014 Framework	2015-2020 Conservation First
<ul style="list-style-type: none">• Interim peak demand targets• Centralized program design (OPA)• Fragmented delivery – multiple partners including LDCs• Multiple brands and program names• Foundation for province-wide conservation efforts	<ul style="list-style-type: none">• Peak demand and energy targets• Centralized program design (OPA)• One key delivery channel (LDCs)• Established saveONenergy (cohesive message)• “Low hanging fruit” for business	<ul style="list-style-type: none">• Energy targets only• Decentralized LDC-led program design• Regional collaboration & gas integration• Introduction of risk-based financing• Holistic deeper solutions• Greater transparency in reporting and costs

Conservation is Our First Priority



✓ *Less costly* than building new generation – cost to consumers is less than 4¢/ kWh

✓ Helps Ontarians *better manage* their energy costs

✓ Favourable *return on investment* for customers

✓ Reduces *greenhouse gas emissions*

Conservation Success in Ontario

saveONenergySM

2011
TO
2014

416,000

Inefficient Appliances
Collected Since 2006

6,400 GWh

In Electricity saved from 2011 to 2014 Across Ontario

9.9 Million

Energy Saving Products Purchased
With saveONenergy Coupons

2,100
Energy Audits

81,000
Small Business Direct
Install Lighting Projects

30,000
Retrofit Projects

Customers invested over **\$2 billion** into Conservation

Programs and saved over **\$4 billion** in avoided costs



Independent Electricity
System Operator

Conservation Goals



Almost all electricity demand growth to 2032 to be met by energy efficiency & improved codes and standards

**Goals:
8.7 TWh in 2020;
30 TWh in 2032**

Demand Response to meet 10% of peak demand by 2025

Requirements of the Conservation Framework

- Minister of Energy directed the IESO to implement a **new conservation framework** focused on:
 - Providing LDCs with **long-term stable funding** and budgets
 - Greater **LDC autonomy**
 - **Flexibility** to align conservation programs to local needs
 - **Streamlined approvals** and administrative requirements
 - **Cost-effective** LDC CDM plans
 - Encouraging **innovation**
 - Regional and natural gas utility **collaboration**

Extensive Consultation on Conservation First

CFAWG	<ul style="list-style-type: none">• Conservation First Advisory Working Group (CFAWG) (<i>OPA, LDCs, gas utilities, Ministry and OEB observers</i>)• Collaborated on draft Energy Conservation Agreement (ECA) terms, including targets, budgets, remedies, etc.
All LDCs	<ul style="list-style-type: none">• Regional workshops to solicit feedback on budgets, targets, incentives, minimum performance, ECA terms, contents of Tool Kit (LDC resources for CDM planning)• Executive roundtables on draft ECA terms
Stakeholder Advisory Group	<ul style="list-style-type: none">• Input on implementation elements and draft business terms including incentives, remedies, draft ECA terms
OPA/IESO Board	<ul style="list-style-type: none">• Input on implementation issues, budget, targets, ECA terms, governance, etc.

Approach for Framework Design

- Collaboration between IESO and LDC sub-groups to design key components of the framework

Targets and Budgets

- Develop a methodology for allocating targets and budgets across LDCs

Conservation Agreements

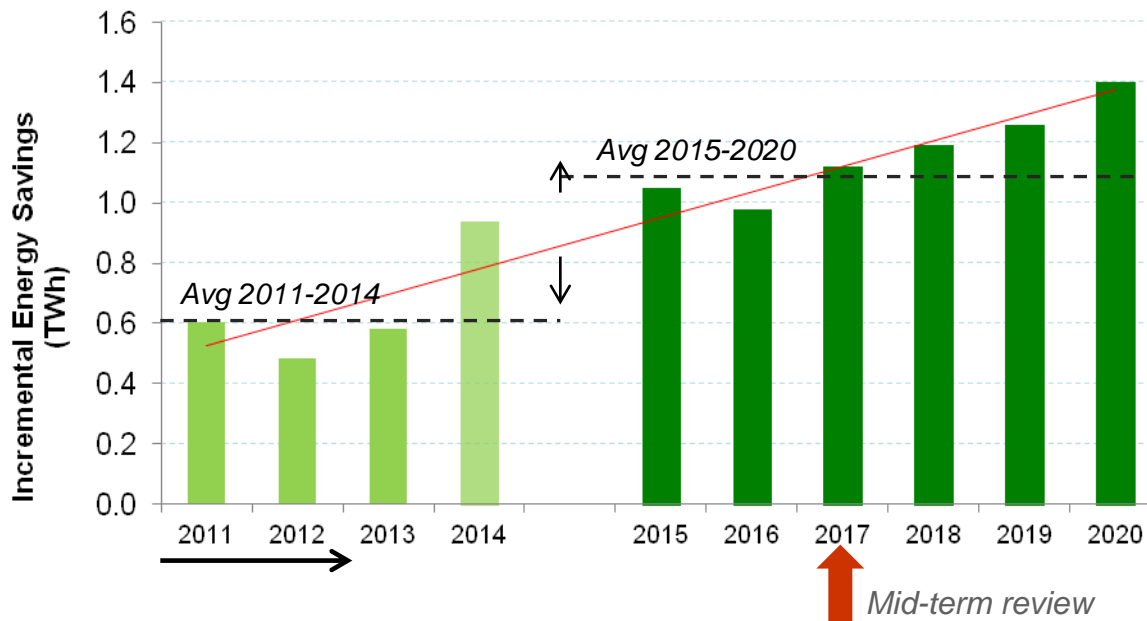
- Develop key conservation governance documents including rules and guideline

Incentives & Penalties

- Develop appropriate rewards and penalties for meeting targets and maintaining cost effectiveness

Ambitious Conservation First Energy Targets

- 8.7 TWh energy target province-wide by 2020 (EE only)
 - 7 TWh for LDCs and 1.7 TWh for Tx customers



~1% of Provincial sales/year through 2020

LDC targets
~90% increase over previous 2011 – 2014 targets

Target Allocation Methodology

- Based on Provincial **Achievable Potential Study**
 - Determined Achievable Potential by IESO zone (10) and sector
- LDC targets allocated based on **LDC's share of load by sector** within each IESO zone

Provincial Distributor CDM Target

Zone 1 CDM Potential

...

Zone 10 CDM Potential

Zone 1 Res
Potential

LDC₁ Res
Load

LDC₂ Res
Load

Zone 10 Res
Potential

LDC₅ Res
Load

LDC₆ Res
Load_s

Zone 1 Non-Res
Potential

LDC₁
Non-Res
Load

LDC₂
Non-Res
Load

Zone 10 Non-Res
Potential

LDC₅
Non-Res
Load

LDC₆ Non-
Res Load

LDC₁
Target

LDC₂
Target

LDC₅
Target

LDC₆
Target

Study CDM potential

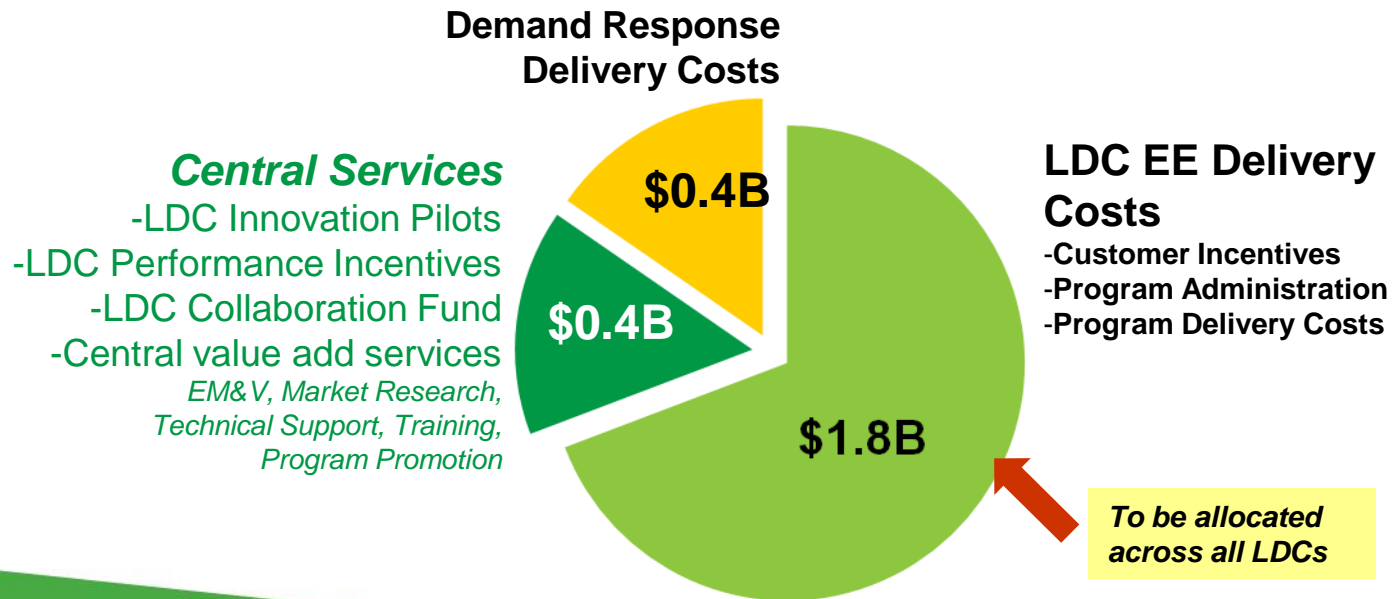
- 34% res
- 66% non-res

ieso

Independent Electricity
System Operator

Cost-Effective Conservation First Budget

- Ontario's Long Term Energy Plan outlines \$2.6B for 2015-2020 Conservation Cost
 - \$2.2B for Energy Efficiency, \$0.4B for Demand Response
 - 3.5¢/kWh portfolio rate (levelized)



Allocation of CDM Budget Across LDCs

- A **budget rate** (\$/ first year kWh) established for each sector based on cost effective program delivery
- LDC budgets determined by **multiplying LDC's sector target by the provincial sector budget rate**

LDC CDM Target = 100 GWh

Residential CDM target =
40 GWh

Res Funding Rate =
\$0.33/kWh

Res Budget = 12.4M

Non-Res CDM Target =
60GWh

Res Funding Rate =
\$0.23/kWh

Non-Res Budget =
14.4M

Total LDC CDM Budget \$26.4 M

Sector	LUEC (\$/kWh)	PAC Ratio
Res	\$0.057	1.1
Non-Res	\$0.024	2.9
Total	\$0.031	2.2

Total Budget Only – flexibility to determine where to spend CDM budget

CDM Plan Development

LDC CDM Plan

- Year by year plan for meeting 2020 CDM target
- Summarizes output from CDM tools

Achievable Potential Calculator

- Identifies areas of local CDM opportunities by sector, end-use and building type
- Based on local and regional information

Cost Effectiveness Calculator

- Calculates cost effectiveness metrics required for CDM Plan
- Forecast program savings through program archetypes
- Evaluate different program scenarios

Conservation First Rewards and Penalties

Performance Incentives

- Incentive at mid-term (2017) for achievement of 50% of target
 - **1.0 ¢/kWh** (single LDC), **1.5¢/kWh** (joint Plan)
- Incentive for achieving target (as above), in addition to **1.5¢/kWh** for exceeding target

Performance Remedies

- **Graduated** administrative and financial remedies based on:
 - proportion of planned savings achieved and
 - cost effectiveness of LDC plan delivery

Choice of Funding Mechanism for LDCs

Full Cost Recovery

- Traditional model where LDC reimbursed on all eligible costs
- Low LDC Risk = Low Reward
- Less flexibility and creativity in establishing customer incentives
- Retroactive payment recovery for non-performance

Pay for Performance

- Evolved model where LDC paid on Net Verified Savings (\$/kWh)
- Greater LDC Risk = Greater Reward
- Greater flexibility and creativity in customer incentive levels
- No retroactive payment required

Option for Hybrid Approach
for each Sector

Establishing Roles and Responsibilities

IESO

Establish Framework which Promotes Collaboration

Support Program Design & Innovation

Monitoring, Evaluation & Compliance

LDCs

Develop and Maintain Cost Effective CDM Plan

Program Design and Delivery

Integration with Regional & Community Planning and Gas

Successful Launch of Conservation First

- 13 LDCs are currently in market implementing Conservation First



Remaining LDCs to launch CFF in October through December 2015

Transitioning Between Two Frameworks

- Staggered rollout of framework across LDCs
 - Current 2011-2014 framework extended into 2015
 - LDCs choose when to launch CFF
- Ensuring “seamless” customer experience
 - Participant agreements & rules
 - Website
- CDM information systems
 - Need for centralized data and reporting



Competing Policies & Drivers

- Energy vs. demand targets
 - CDM targets vs. regional planning
- Impact of upcoming Cap and trade policy on CDM
 - Announcement that Ontario will join Quebec and California in Western Climate Initiative
- Definition of “conservation”
 - Behind-the-meter generation, dynamic pricing, etc.



Collaboration Across LDCs and Partners

- **IESO promoting collaboration** in new framework
 - Increased performance incentives for collaborating LDCs
 - Access to LDC Collaboration Fund
- **Collaboration across LDCs**
 - 16 joint CDM Plans submitted (48 LDCs)
 - Maximize administrative and delivery efficiencies
- **Collaboration with Gas Utilities**
 - Members of IESO/LDC Working Groups
 - Opportunities identified in CDM plans and in program / pilot business cases

Greater Opportunity for Success & Cost Effective Programs

LDC Innovation and Local Programs

- \$70M LDC Innovation Fund available to LDCs
- Almost **40 unique programs and pilots ideas** included in CDM Plans
 - **Residential** –focus on whole home solutions (audits, retrofits, financing options, social benchmarking)
 - **Business** – focus on operational savings, improved targeting (optimizing facility performance, high opportunity sectors and measures: wineries, commercial kitchens, hotels, VFDs, motors)
- **11 LDC pilots currently underway**
 - **Toronto Hydro** –Direct Install Roof Top Unit Controls
 - **EnWin** – Retro-commissioning Commercial Buildings
 - **Niagara On The Lake** – Winery And Greenhouse Program
 - **Niagara Peninsula** –Prescriptive Measures for Hotels/Motels

Final Remarks...

- Conservation First Framework reflects a **continuing evolution of conservation** planning and management in Ontario
- CDM Framework developed through a **collaborative and inclusive process**
 - Less focus on central, IESO-led administration
 - Greater autonomy to LDCs
- Still challenges to address, but encouraged by **early successes** observed in framework launch

Contact and Additional Information

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