



## **Pushing the Envelope: Incentives and Mandates**

for the Energy Efficiency Global Forum and Exposition  
by Peter Love, Chief Energy Conservation Officer  
Ontario Power Authority  
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# The Ontario Power Authority Mandate



- **Mandate is to ensure reliable, sustainable electricity system for Ontario**
- **Peak demand outlook determines supply needs**
- **80% of current generation capacity to be replaced within 20 years**

# Integrated Power System Plan

- A road map for Ontario's electricity future
- Has a 20-year outlook, updated every three years
- Four key results:
  - Growth in demand is reduced by 75 percent through conservation.
  - Coal is replaced in the supply mix with renewable energy and natural gas.
  - Nuclear power is restored through refurbishments and new builds.
  - Transmission is reinforced for reliable service and to connect renewable energy to population centres.
- \$10 billion to be invested in conservation.



# Conservation Targets

- **6,300 MW reduction in peak demand by 2025**
- **Interim targets of 1,350 MW by 2007 and another 1,350 MW by 2010**
- **2006 results were 1,080 MW**
- **OPA to lead, coordinate, facilitate, build capability**

# Four Types of Conservation

- **Conservation/Demand Management**

- Using less/using less during peak hours or deferring usage to off-peak hours



- **Energy Efficiency**

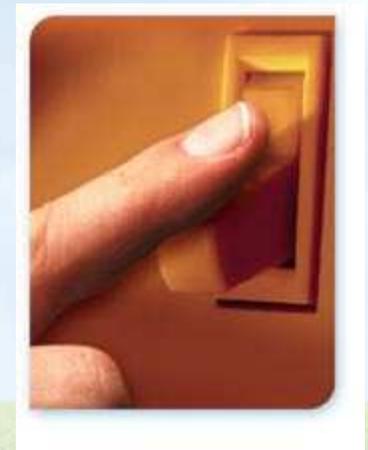
- Using more efficiently

- **Fuel Switching**

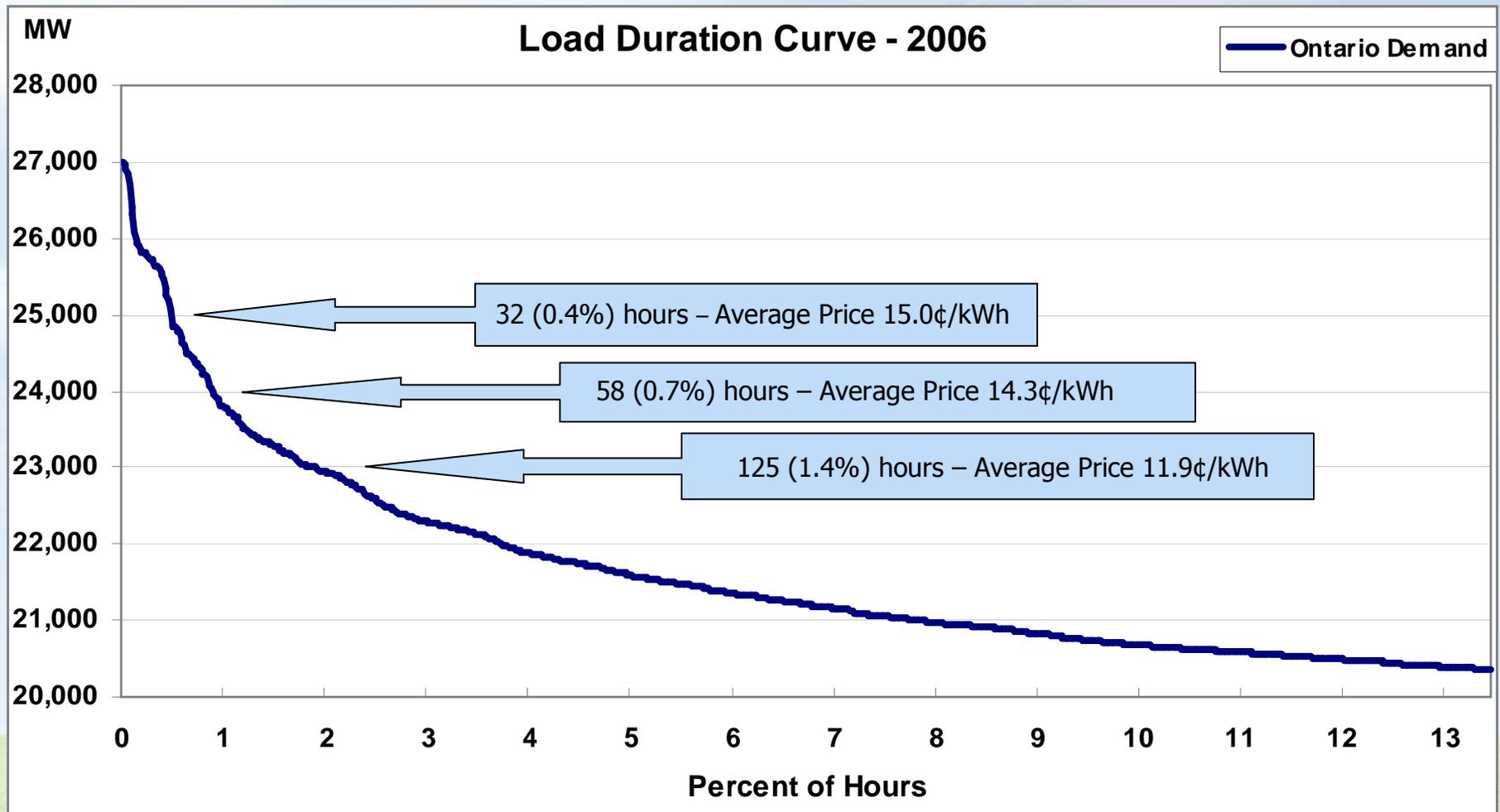
- Switching from electricity to another fuel

- **Self-generation/Co-generation**

- Displacing load off the power grid



# The Importance of Demand Management



Source: IESO

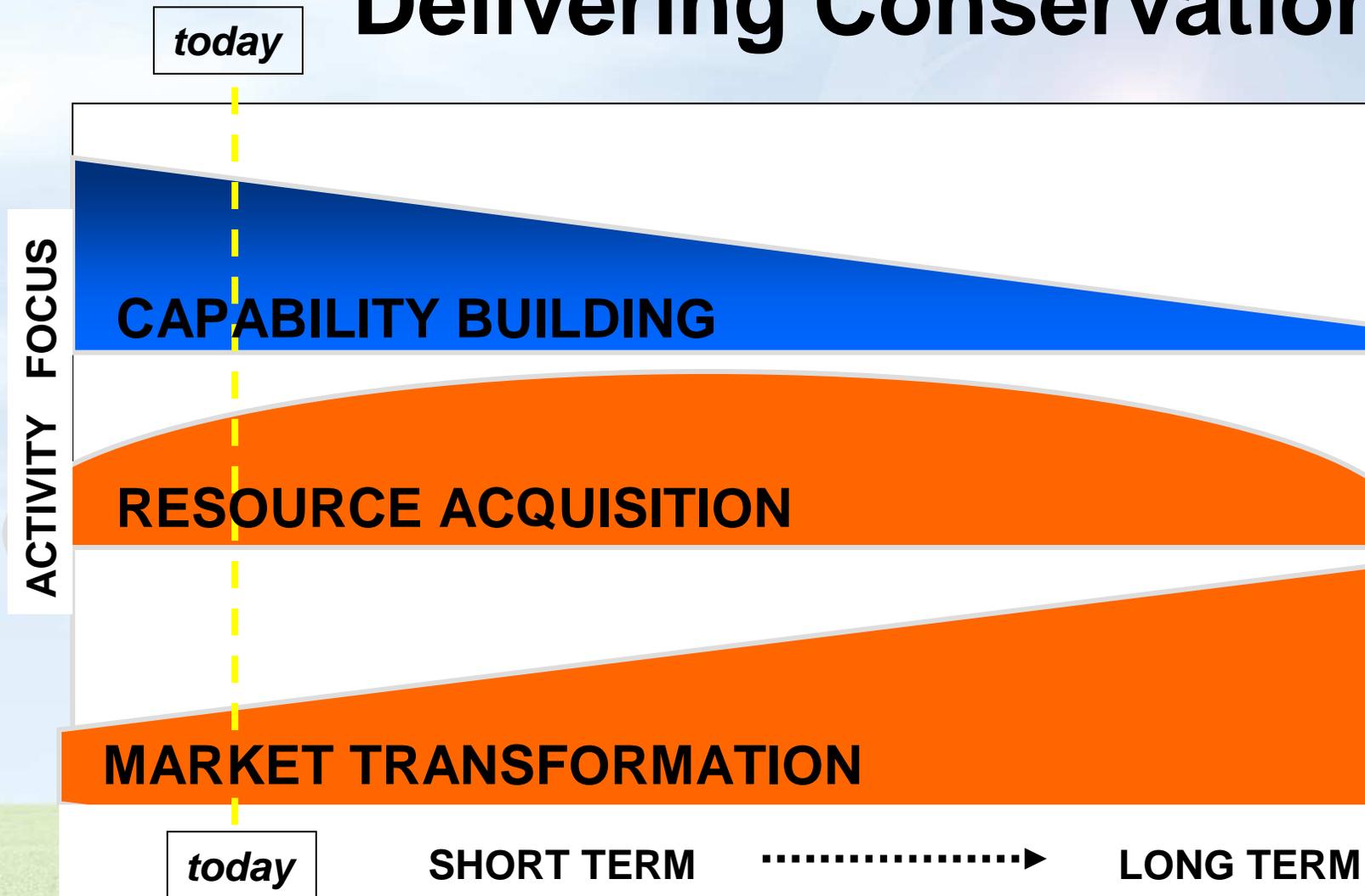
# Time of Use Rates

*Time-of-use prices as of November 1, 2007. Prices subject to change every six months.*

<b>Day of the Week</b>	<b>Time</b>	<b>Time-of-Use Period</b>	<b>Time-of-Use Price (cents/kWh)</b>
Weekends & holidays	All day	Off-peak	3.0
Summer Weekdays (May 1 to Oct. 31)	7 a.m. to 11 a.m.	Mid-peak	7.0
	11 a.m. to 5 p.m.	On-peak	8.7
	5 p.m. to 10 p.m.	Mid-peak	7.0
	10 p.m. to 7 a.m.	Off-peak	3.0
Winter Weekdays (Nov. 1 to April 30)	7 a.m. to 11 a.m.	On-peak	8.7
	11 a.m. to 5 p.m.	Mid-peak	7.0
	5 p.m. to 8 p.m.	On-peak	8.7
	8 p.m. to 10 p.m.	Mid-peak	7.0
	10 p.m. to 7 a.m.	Off-peak	3.0

Source: Ontario Energy Board

# Conceptual Approach to Delivering Conservation

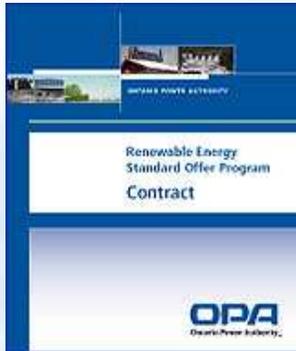


# OPA Conservation Programs

- 18 in 2007, 3 more in development, expect 27 in 2008
- **Mass markets** – Every Kilowatt Counts, *peaksaver*<sup>TM</sup>, The Great Refrigerator Roundup
- **Business markets** – Electricity Retrofit Incentive Program, BOMA program, City of Toronto programs
- **Demand Response** suite of programs

*TM of Toronto Hydro Corporation. Used under license.*

# Renewable Energy Standard Offer Program

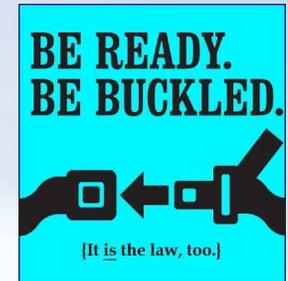


- **First in North America**
- **Supports small grid-connected wind, water, solar PV, biomass**
- **Price stability plus security of 20-year contract**
- **Bonus payments for peak-period reliability**
- **Similar program for clean energy to be launched soon**

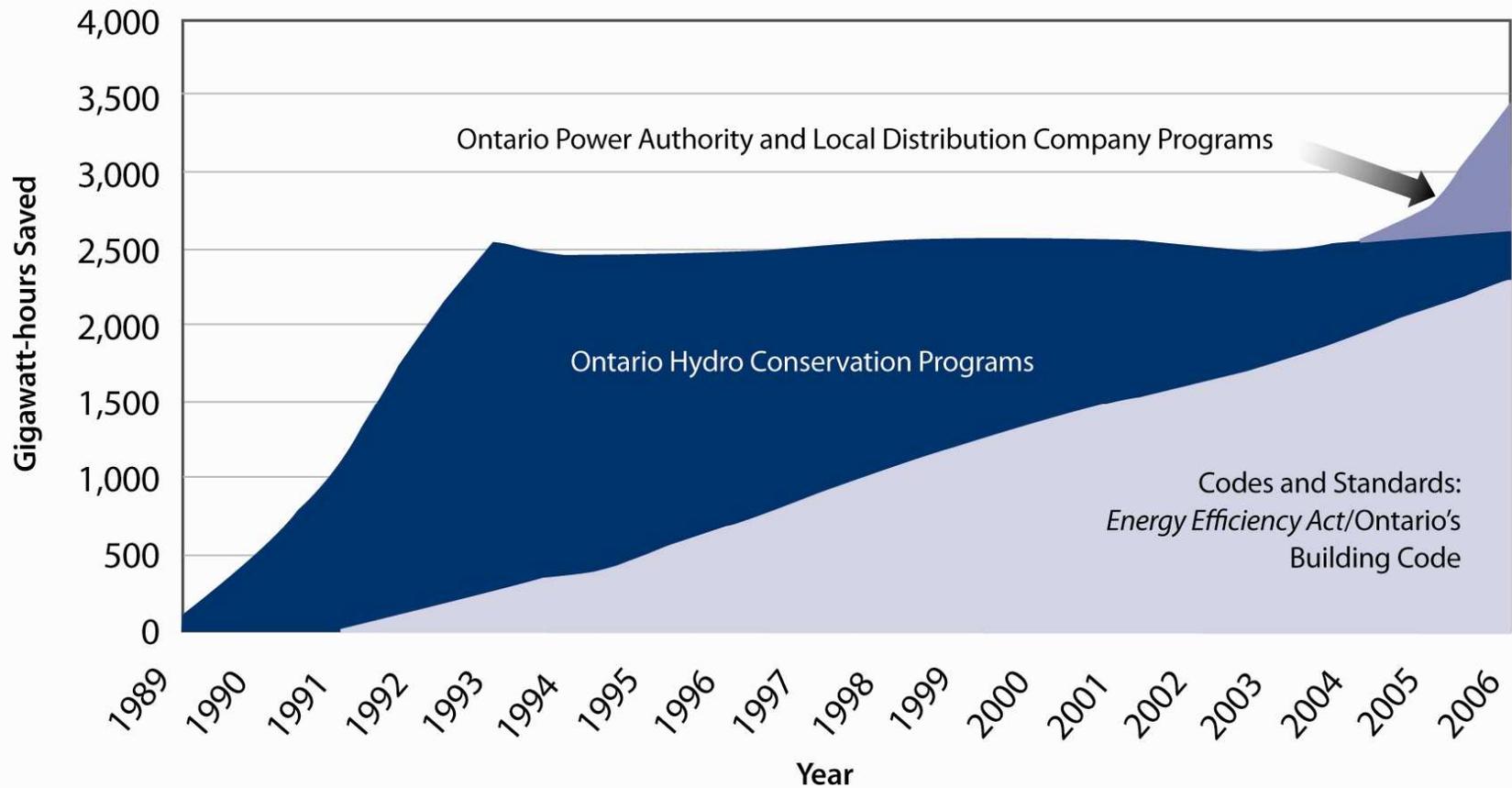


# Creating a “Conservation Culture”

- We have changed our attitudes on recycling, seat belts, smoking and drinking and driving
- We can do it on energy conservation, too



# Impact of Codes & Standards in Ontario



Source: Ontario Power Authority, 2007

# Codes and Standards

- Changes to codes and standards have a sustained effect but don't attract much public attention.
- Results are slow in coming in that they rely on the turnover of capital stock in housing, machinery and appliances.
- The most successful conservation programs therefore use a combination of programs and changes to codes and standards.
- Standards and government policy (including pricing) may account for up to 75 percent of conservation in the long term.

# Key Relationship between Voluntary Programs and Mandatory Requirements

- **Equipment and appliances** – As Energy Star appliances gain market share, mandatory energy performance requirements and Energy Star requirements are increased
- **Lighting** – Success of marketing and incentive programs contributed to Ontario and Canadian decision to set minimum performance standards for lighting by 2012
- **Building Codes** – Success of voluntary programs (R-2000, Energy Star for New Homes and Commercial Buildings Incentive program) a key factor in increasing minimum energy efficiency of homes and buildings by 25 to 30 percent
- In all cases, adoption of higher standards facilitated by successful marketing, as costs are reduced and quality improved.

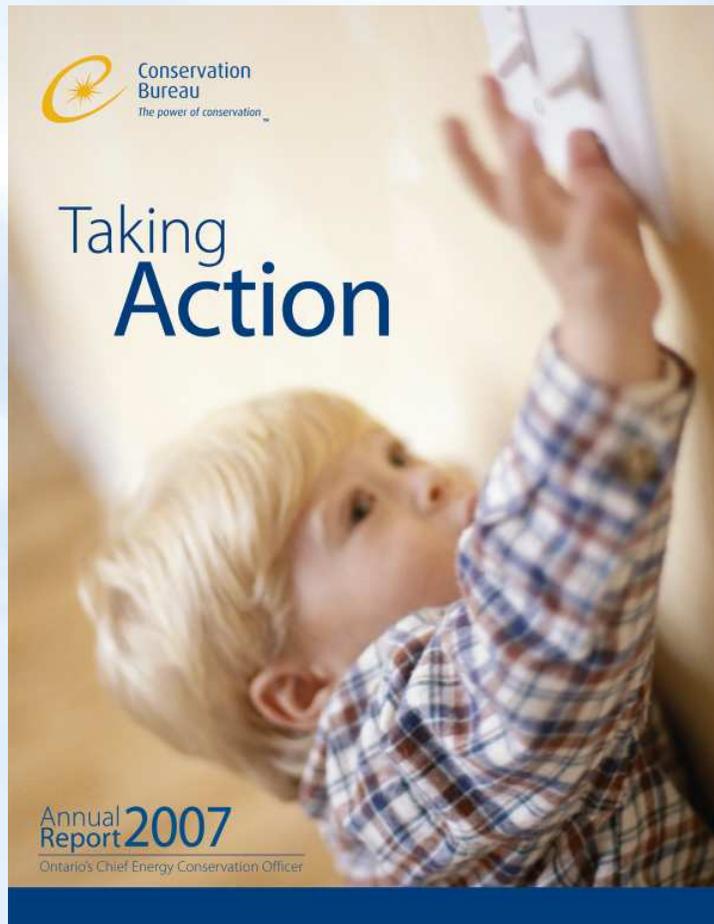
# 2007 Recommendations

- A comprehensive and cohesive energy conservation policy
- Reconfigure role of Chief Energy Conservation Officer to include other important forms of energy
- A plan for the orderly consideration of energy efficiency in all renovations and retrofits.
- Raise the minimum energy performance standards for six consumer products (refrigerators, freezers, dishwashers, clothes washers, dehumidifiers and air conditioners) to the highest levels in North America.
- Assist low-income households upgrade to energy-efficient products affected by new codes and standards.
- Annual energy conservation plans by all public agencies

## 2007 Recommendations (cont'd)

- CHP projects, clotheslines and solar collectors may be used where there are restrictions that otherwise prevent or impede their use
- Voluntary labelling of the energy performance of all new and resale buildings
- Appoint Municipal Energy Conservation Officers to engage communities at the local level in creating a culture of conservation
- Government procurement policies and contracts should include current ENERGY STAR® requirements where available
- Electricity bills to provide information to enable consumers to make better decisions about energy use
- Develop educational tools to enable customers to benefit from technologies such as smart meters

# Questions



Peter Love  
Chief Energy Conservation  
Officer

Ontario Power Authority

Suite 1600

120 Adelaide Street West

Toronto, ON M5H 1T1

416-967-7474 (Main)

1-800-797-9604 Toll Free

[www.powerauthority.on.ca](http://www.powerauthority.on.ca)

[www.conservationbureau.on.ca](http://www.conservationbureau.on.ca)

[ceco@conservationbureau.on.ca](mailto:ceco@conservationbureau.on.ca)