



Pushing the Envelope: Incentives and Mandates

for the Energy Efficiency Global Forum and Exposition

by Peter Love, Chief Energy Conservation Officer

Ontario Power Authority

Nov. 13, 2007

2007 ENERGY EFFICIENCY GLOBAL FORUM & EXPOSITION



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



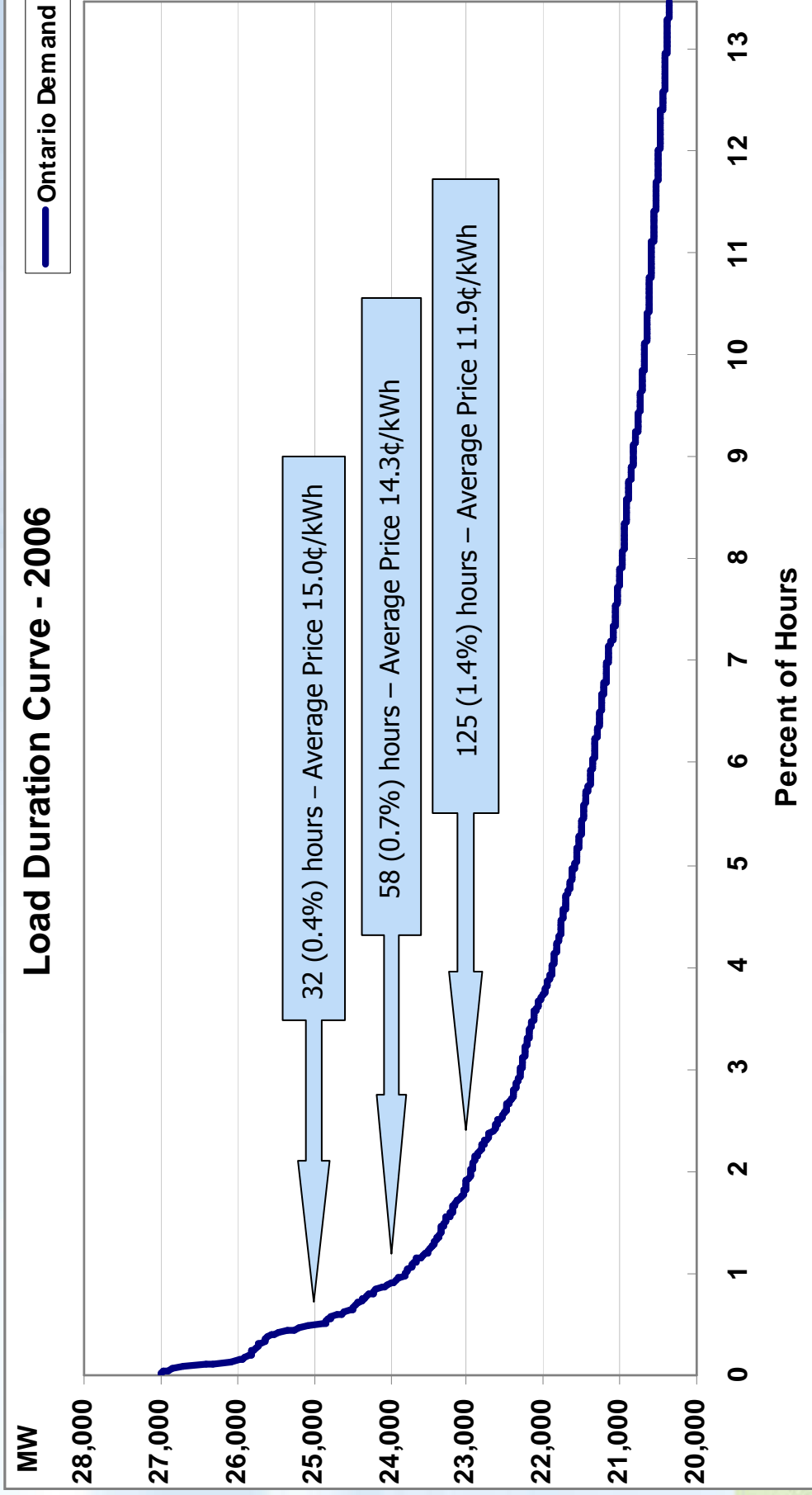
- **Fuel Switching**

- Switching from electricity to another fuel

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

- Displacing load off the power grid

The Importance of Demand Management



Source: IESO

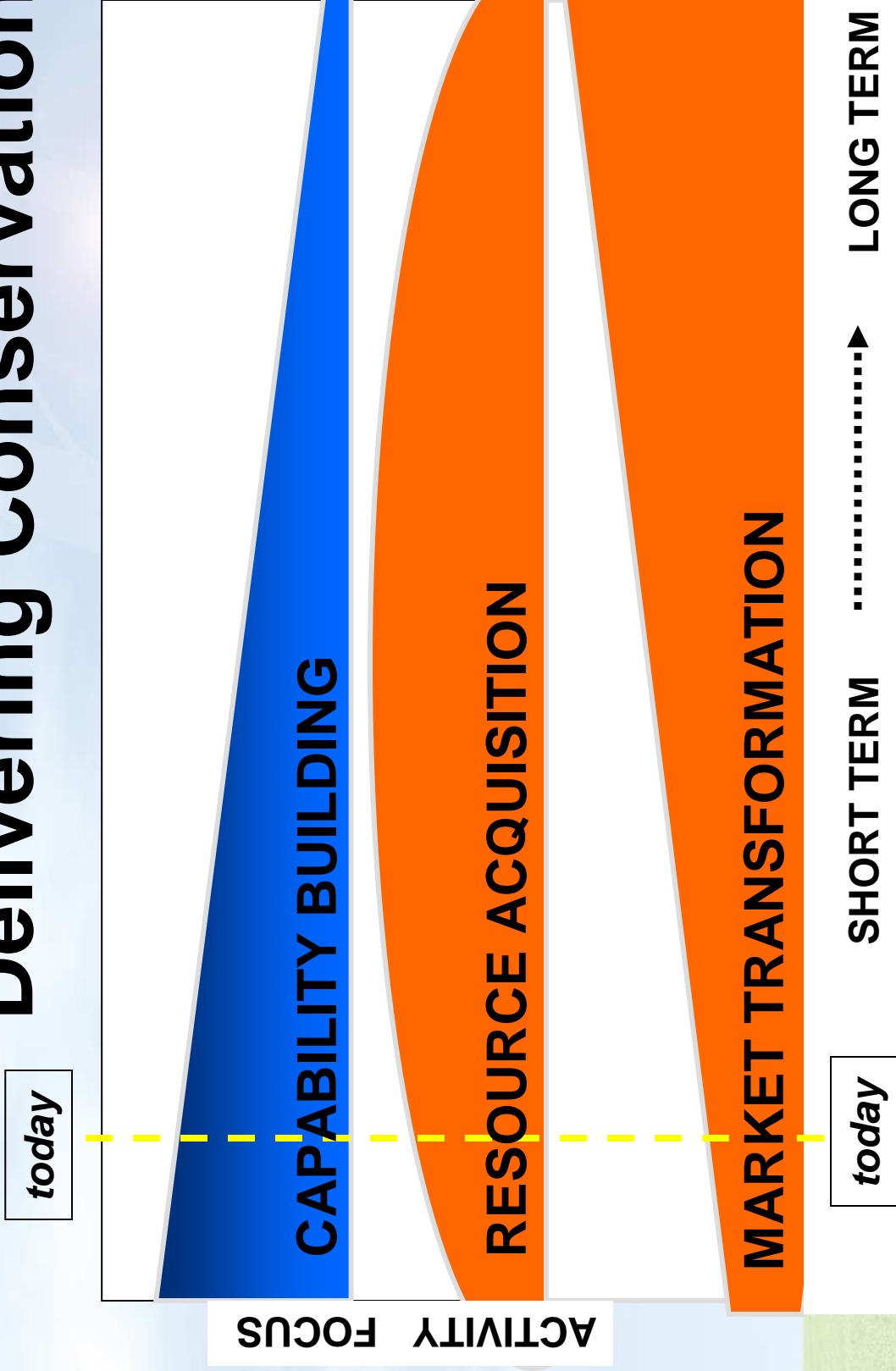
Time of Use Rates

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

Day of the Week	Time	Time-of-Use Period	Time-of-Use Price (cents/kWh)
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*TM, The Great Refrigerator Roundup
- **Business markets** – Electricity Retrofit Incentive Program, BOMA program, City of Toronto programs
- **Demand Response** suite of programs

Renewable Energy Standard Offer Program

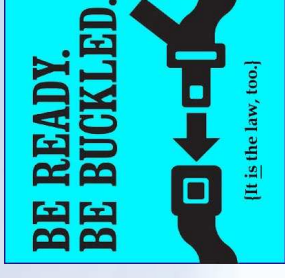


- First in North America
- Supports small grid-connected wind, water, solar PV, biomass
- Price stability plus security of 20-year contract
- Bonus payments for peak-period reliability
- Similar program for clean energy to be launched soon

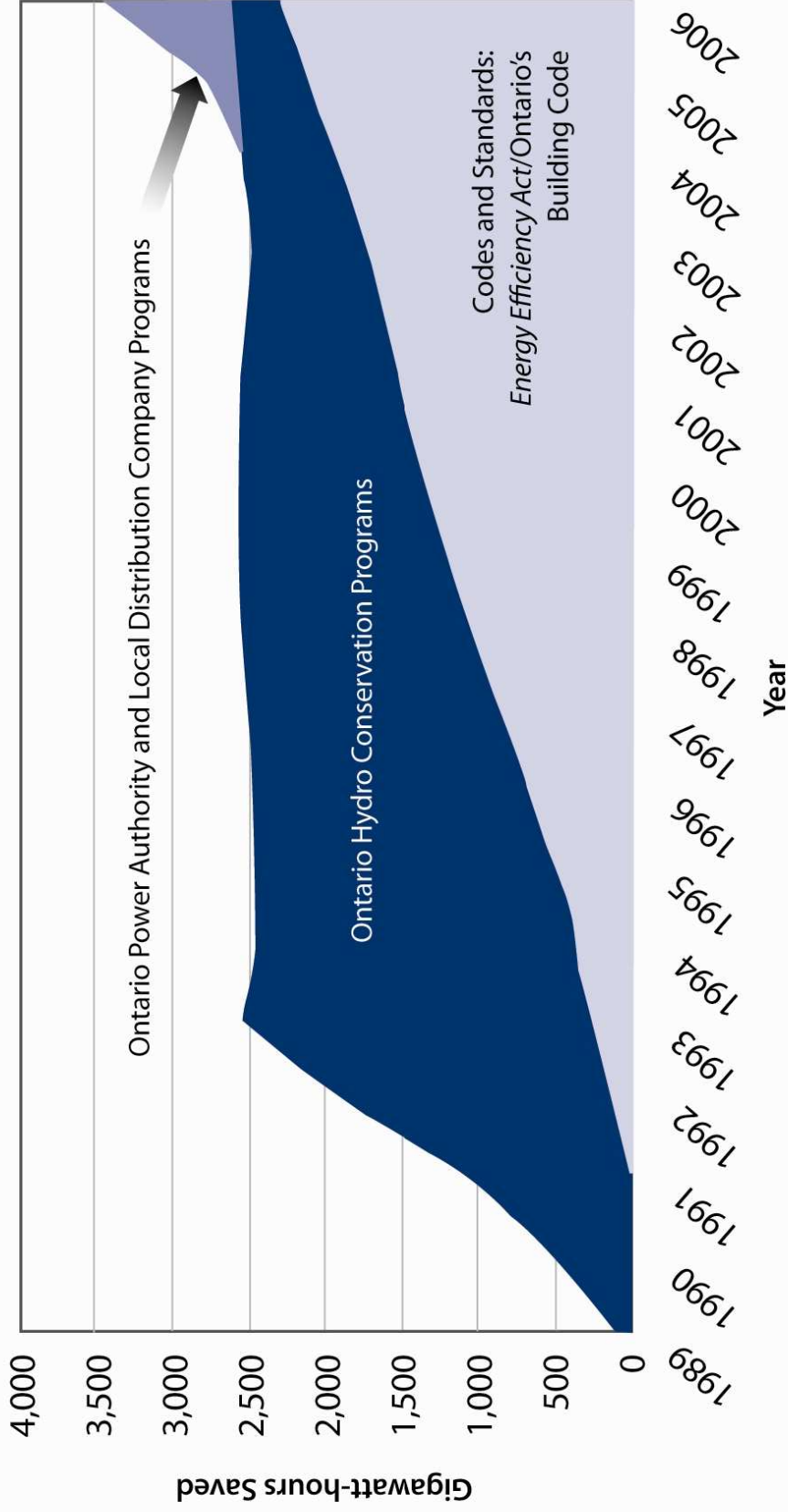


Creating a “Conservation Culture”

- 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

www.conservationbureau.on.ca

ceco@conservationbureau.on.ca