



Canadian  
Electricity  
Association

Association  
canadienne  
de l'électricité

# Results from Canada's Energy Utilities

Policies for Energy Provider Delivery of Energy Efficiency  
North American Regional Policy Dialogue  
Washington, DC, April 18-19 2012



# Overview

- Canadian Landscape
- Program Delivery
- Utility Achievements
- Attitudes Toward Energy Efficiency
- Recent Developments
- Trends
- Challenges
- Next Steps



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# Canadian Electricity Association (CEA)

- The voice of Canadian electricity



# Canadian Gas Association (CGA)

- Canada's gas distribution companies, delivering energy services to over 6.2 million homes, businesses, and other establishments; covering well over half the population.
- Represent transmission companies, manufacturers, and suppliers.
- Natural gas meets 30 per cent of Canada's energy needs.



# Canada's Multi-Jurisdictional Environment

Jurisdictional Division of Responsibility	
Provincial/Territorial Governments	Federal Government
<ul style="list-style-type: none"> <li>Resource management within provincial boundaries</li> <li>Intra-provincial trade and commerce</li> <li>Intra-provincial environmental impacts</li> <li>Provincial authorities regulate consumer electricity prices, generation, transmission and distribution</li> <li>Conservation/Energy Efficiency and demand response policies</li> </ul>	<ul style="list-style-type: none"> <li>Resource management on frontier lands</li> <li>Nuclear safety</li> <li>Inter-provincial and international trade</li> <li>Trans-boundary environmental impacts</li> <li>Environmental impacts where federal lands, investment or powers apply</li> <li>Energy Efficiency - building codes, appliance and equipment standards, labelling</li> </ul>

# Delivery of Electricity Energy Efficiency Programs

Electricity energy efficiency programs are administered and delivered in several ways in Canada

- by a utility (e.g. BC Hydro),
- an arms-length government agency (e.g. Efficiency Nova Scotia),
- a not-for-profit agency set up by provincial government legislation (e.g. Climate Change Central) (Alberta).
- In Ontario electricity efficiency and conservation programs are developed by the Ontario Power Authority (OPA), a not-for-profit private corporation, established through provincial legislation, but are delivered through contractual relationships with the provinces electrical utilities



# Electricity Industry Achievement

Since 1990 the CEA member companies that are energy distributors, have invested \$3 billion in energy efficiency programs saving enough electricity to power over 3.1M households for a year - the equivalent of :

- Powering Canada's 683 hospitals for 2 years
- Taking 1 million vehicles off the road.
- Powering all the households in the city of Vancouver for almost 4 years.
- Powering Canada's 254 universities for almost 2 years



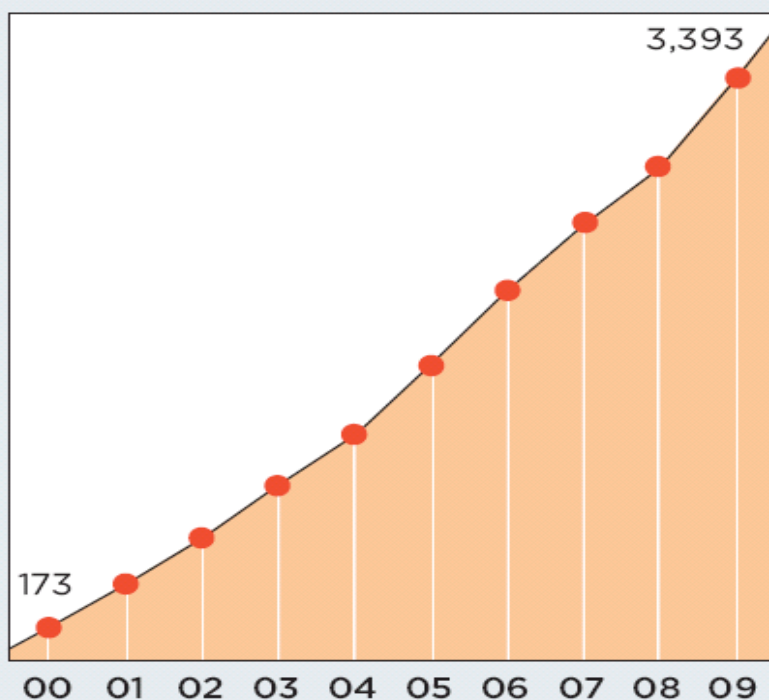


# Canadian Natural Gas Distribution Utilities

## Reduction in Greenhouse Gas Emissions

as a result of DSM activities (estimated)

*thousands of tonnes*



*Between 2000 and 2009, energy savings from gas utility DSM programs have steadily reduced greenhouse gas emissions. Since DSM programs offer long-lived measures, these reductions will persist from year to year.*

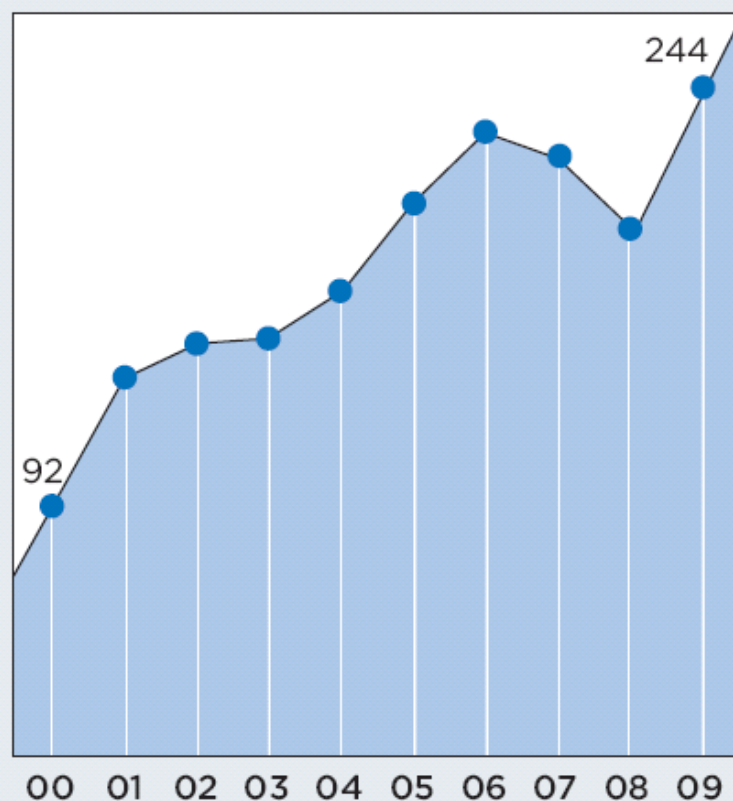


# Canadian Natural Gas Distribution Utilities

## Nationwide natural gas savings

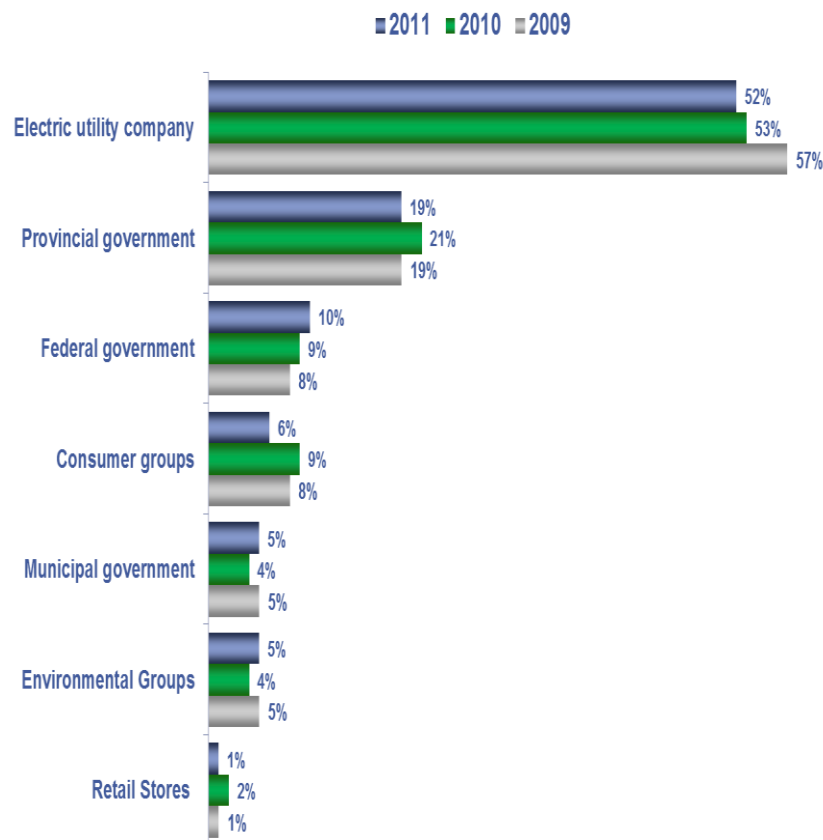
as a result of DSM activities (estimated)

*millions of cubic meters*

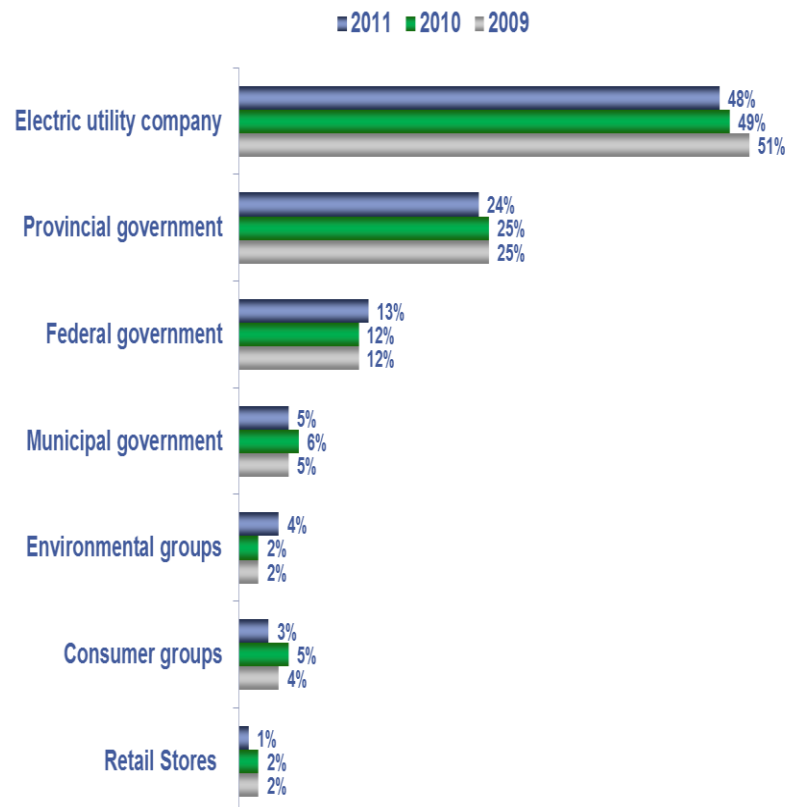


*Since 2000, cumulative nationwide natural gas end-use savings from DSM programs exceeded 1794 million M<sup>3</sup>.*

## Ideal Information Source for Energy Efficiency



## Ideal Delivery Channel for Energy Efficiency



Source: CEA 2011 Public Attitudes Survey

# Recent Developments Impacting Energy Efficiency

## Electric Vehicles

- Uptake will vary across the country and within provinces
  - Forecast unknown
  - Difficult to predict impact on load
- Trials underway in some jurisdictions

## Cross- fuel partnerships

- Electric and gas utilities partnering to provide energy efficiency programs, advice

## Customer Perspectives and Expectations Are Changing

The economy is a predominant issue

- Displacing the Environment
- Reliability and price more important than environment
- Saving money is the primary reason to take energy efficiency actions



# More Important: Price or the Environment - Tracking



Source: CEA 2011 Public Attitudes Survey

# Trends Impacting Efficiency – Gas Utility Perspective

Supporting	Not Supporting
<u>Convergence</u> : more discussion in face of market developments, role of technologies like renewables, commodity and infrastructure costs.	<u>Regulation</u> : provincial regulatory agencies are cautious to approve new programs (DSM, etc).
<u>Prices</u> : the rising of some and the falling of others is changing the way we look at meeting our energy needs and what is viable.	<u>"Dollars"</u> : capital for new programs will be tight in the coming years.
<u>Energy Strategies</u> : driven by access to new markets and regulatory streamlining but also ties in the importance of effective energy use.	<u>Consumers</u> : jobs, debt, growth and related economic concerns are the dominant issues, making people especially wary of the prospect of higher costs
<u>Citizen Concerns</u> : While environment less of a concern it remains an issue and the challenge of social license to operate is becoming bigger.	<u>Infrastructure Renewal</u> : will the billions in ratepayer infrastructure renewal investment crowd out new efficiency programs.



## Challenges for Energy Efficiency

- Modulating government policy environment
- Policies often do not benefit all jurisdictions
- Lack of policy focus on demand
- Barriers to coordination and collaboration
- Value perception of Electricity





# Next Steps in Energy Efficiency

## *How can we drive greater energy efficiency for Canada:*

- Continue to engage Associations and companies in the discussion
- Discuss innovative efficiency program designs for the future
- Find ways to engage regulatory bodies and policy shops in the discussion
- Keep an emphasis on controlling costs
- Work to enhance energy literacy as it remains critical in any efficiency effort
- Tighten the relationship between policy > regulatory > utility > consumer





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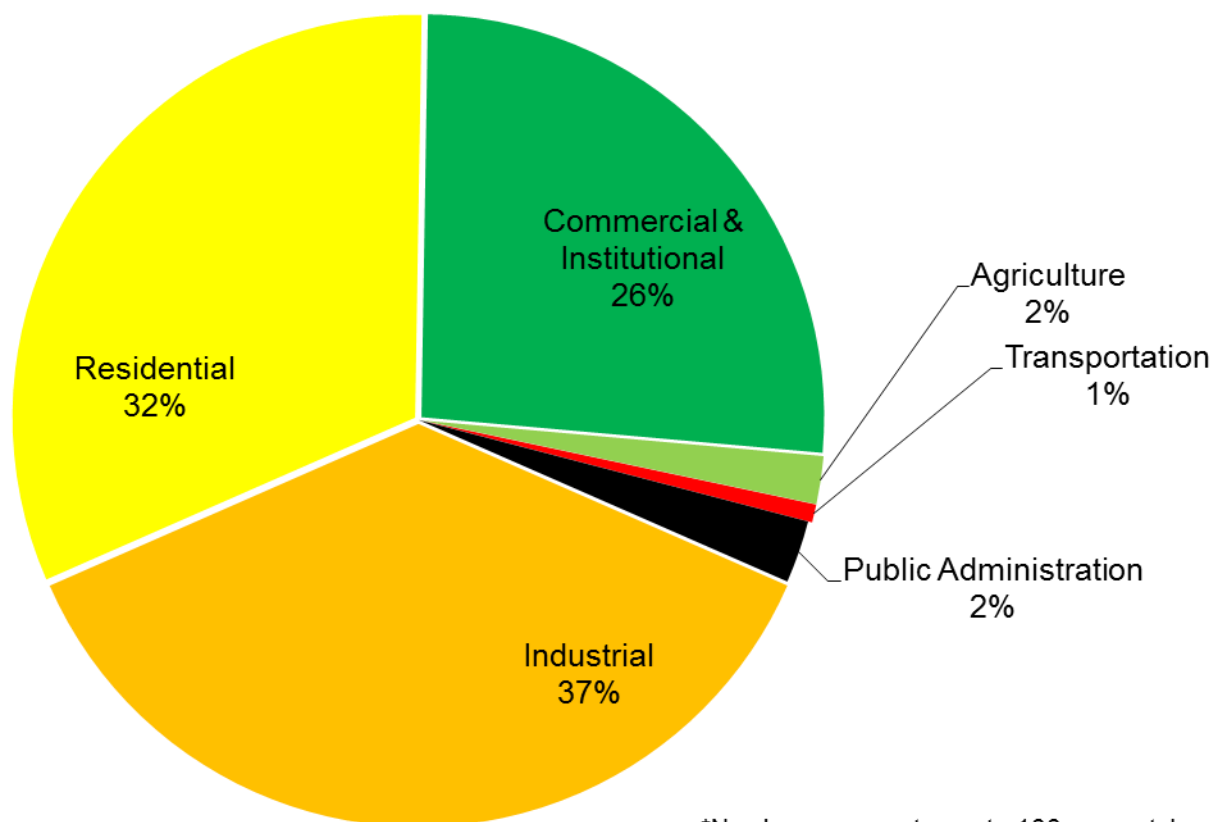


# APPENDIX



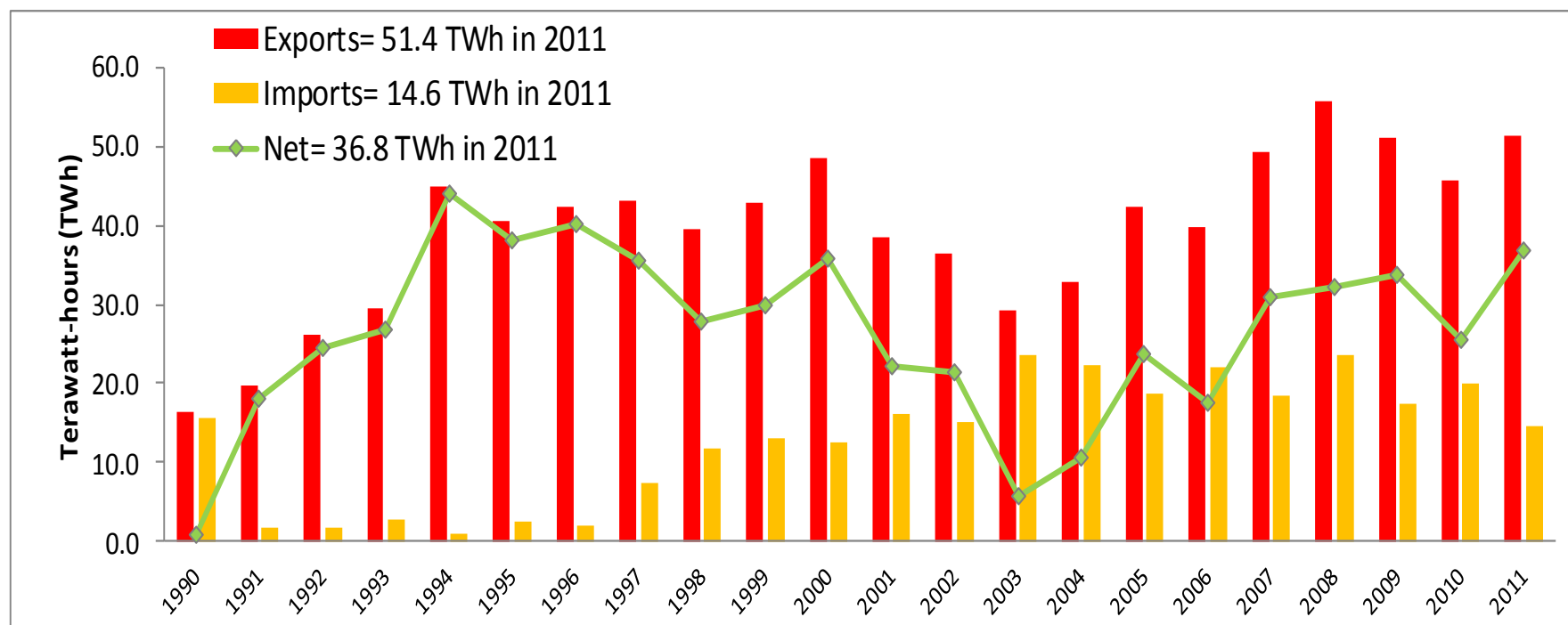
# Electricity Demand in Canada by Sector, 2009

**Total Electricity Demand in Canada, 2009 = 503.4 TWh**



\*Numbers may not sum to 100 percent due to rounding  
Source: Statistics Canada, *Energy Statistics Handbook*, Q4:2009

# Canada-US Electricity Trade Volume, 1990 –2011



Source: National Energy Board, *Electricity Exports and Imports, 2011*

Retrieved February 21, 2012



## Building the Next Generation of Infrastructure: Capital Investment Requirements

**Total Canadian Electric Sector Investment Required by 2030 = \$CAN 293.8 Billion**

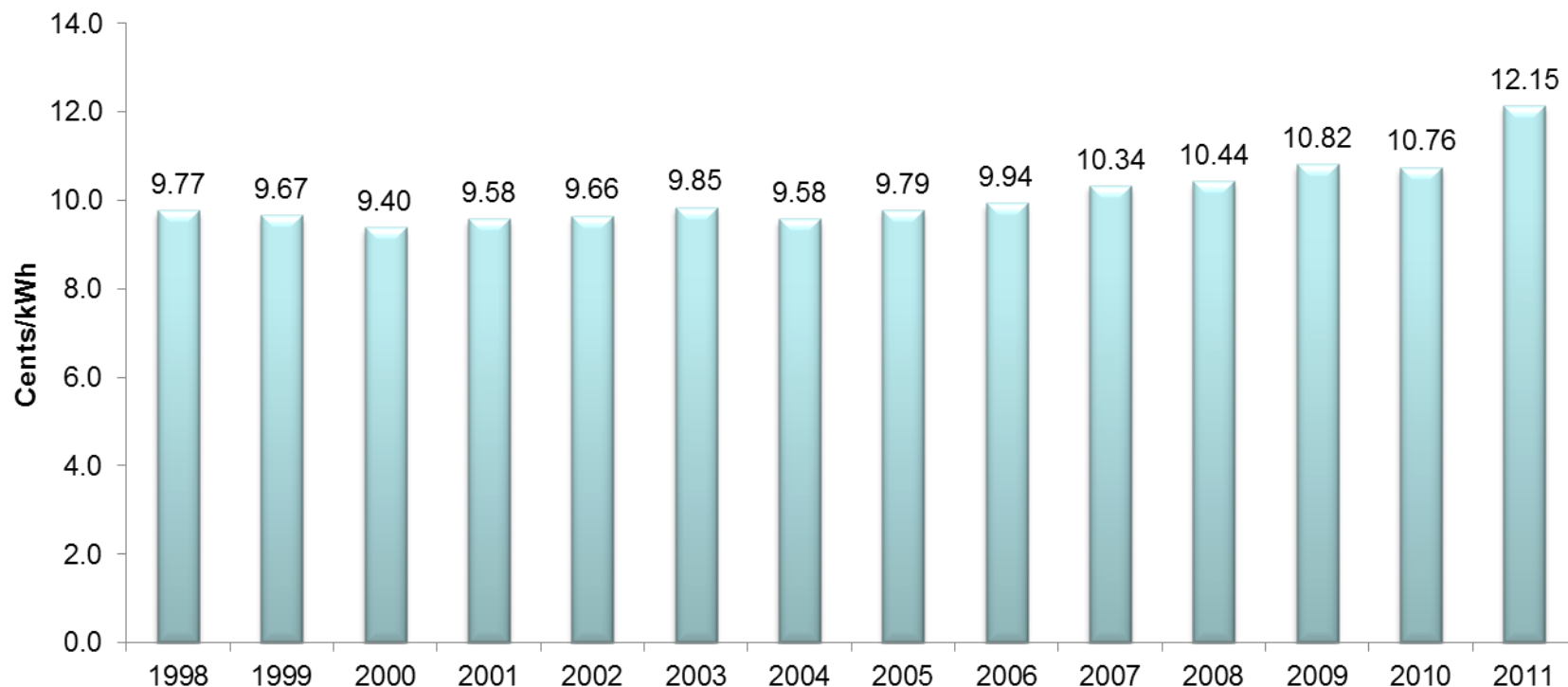
	(Billions of 2010 CDN dollars)			
	Generation	Transmission	Distribution	Total
<b>2010 – 2030</b>	195.7	35.8	62.3	293.8

Source: The Conference Board of Canada, Canada's Electricity Infrastructure, Building a Case for Investment, Report April 2011





## Average Residential Electricity Price in Canada, 1998 – 2011(cents/kWh)



Electricity makes up about 2 per cent of the average household expenditure in Canada. Rates are amongst the lowest worldwide

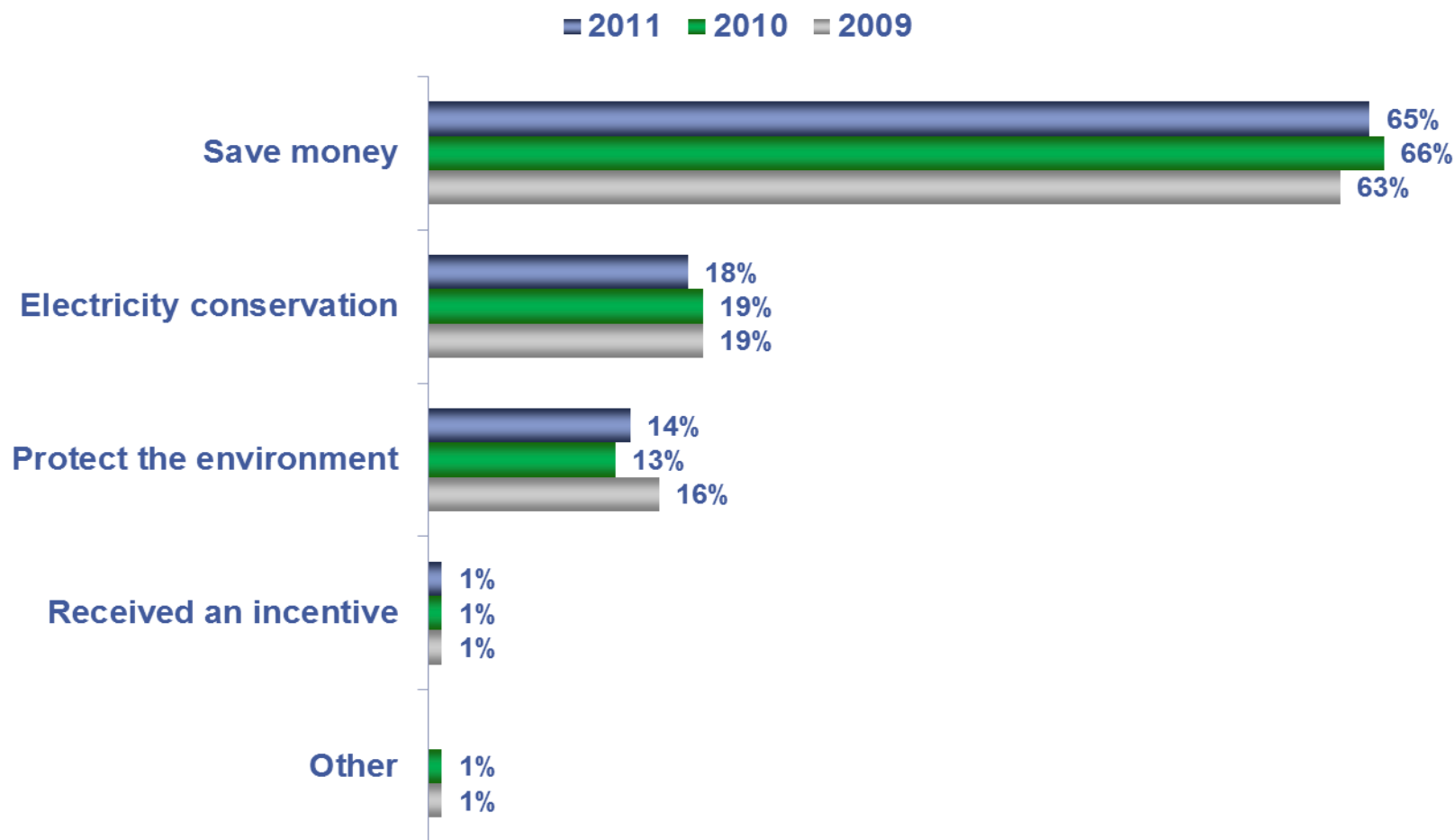
Source: Hydro Quebec, *Comparison of Electricity Prices in Major North American Cities*, 1998 – 2011, Retrieved February 15, 2012

Notes: Based on 1,000 kWh monthly consumption

Average electricity price is an average of 11 major Canadian cities for years 1998-2008 and an average of 12 major Canadian cities for years 2009-2011; and may not represent an exact national average



# Reason to Take Electricity Conservation Actions



Source: CEA 2011 Public Attitudes Survey