

Electricity Infrastructure and Economic Development in Toronto

City of Toronto
Economic Development Committee

October 16, 2012

Anthony Haines
President & CEO
Toronto Hydro Corporation



Toronto Hydro at a Glance

Over 100 years of service history

One of the largest distribution utilities in Canada

Approx. 712,000 customers

Peak load of 5,000 MW

18% of Provincial demand

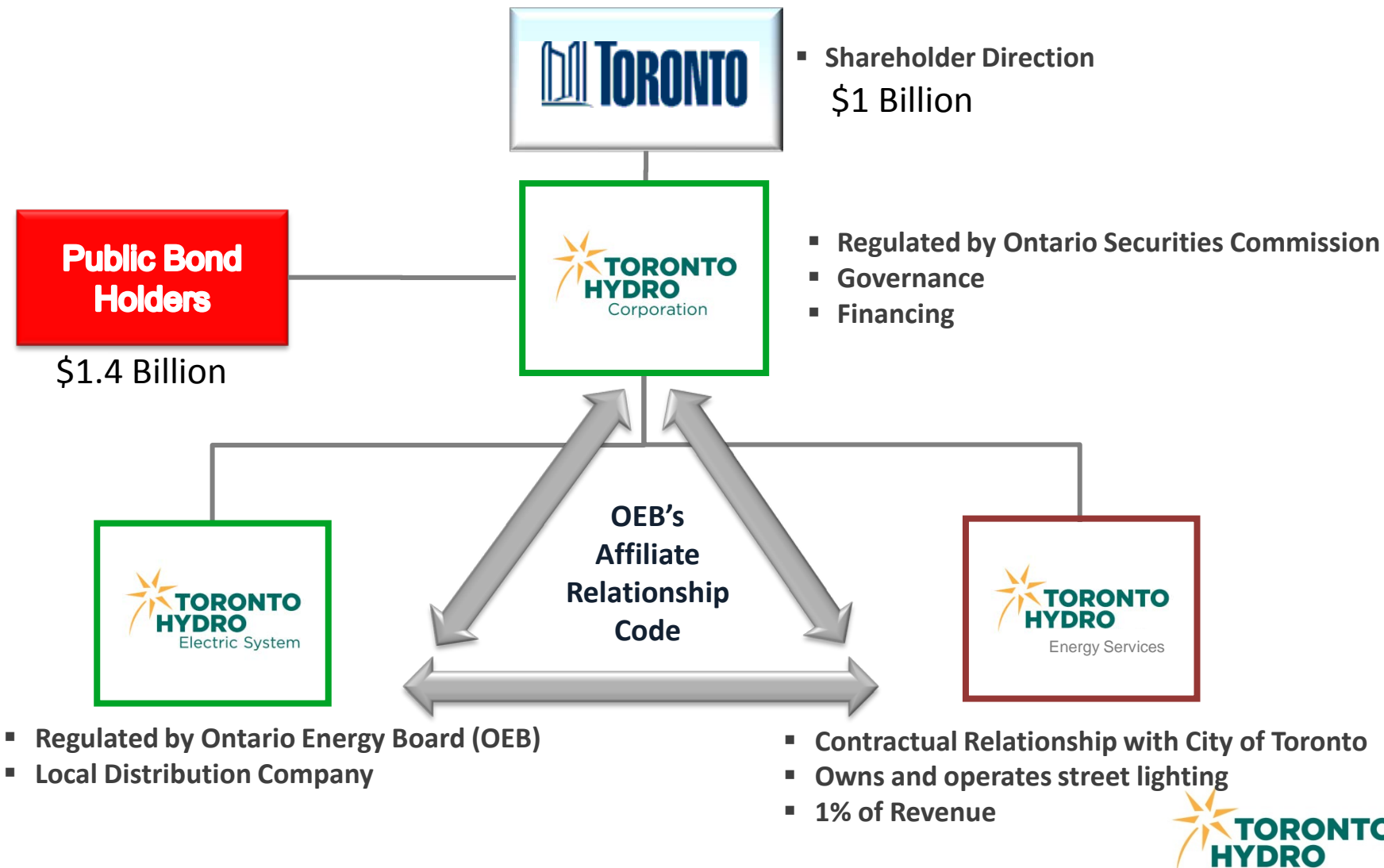
\$2.2 billion in assets

\$2.8 billion revenues

1,500 employees



Corporate Structure



Toronto Hydro and Economic Development

Toronto Hydro supports the City's ambitious economic development strategy through four key functions:

1. Power Supply and Grid Management:

supply current customers, connect new load, plan for future supply needs;

2. Rates:

balance ratepayer costs with need for investment in the grid;

3. Customer Care and Key Account Management Services:

provide enhanced energy management services to commercial, institutional, and industrial customers

4. Community Builder:

significant contributor to city's economic growth.



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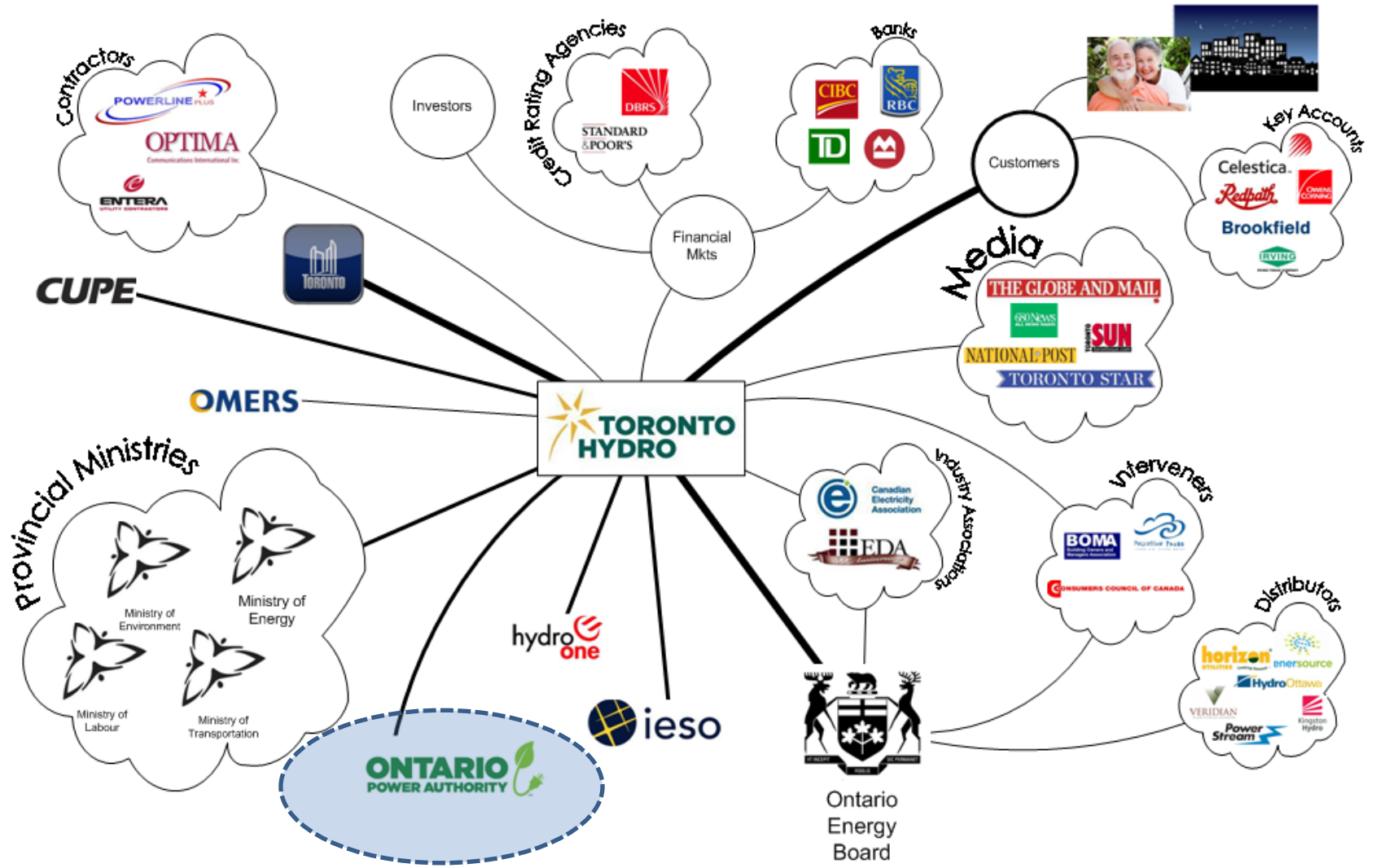
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Complexity in Stakeholder Mgmt



Power Supply and Grid Management

Grid Management: Securing Future Electricity Supply

	City	Population*	Supply Points
	Vancouver	603,502	9
	Los Angeles	3,792,621	8
	London	7,825,200	7
	Chicago	2,707,120	5
	New York	8,175,133	4
	Toronto	2,615,060	2



* Source: www.citypopulation.de/cities.html

Power Supply and Grid Management

Toronto Regional Plan

The **Ontario Power Authority (OPA)**, in collaboration with **Toronto Hydro, Hydro One** and the **Independent Electricity System Operator**, is in the process of developing the Toronto Regional Electricity Plan.

25-year horizon

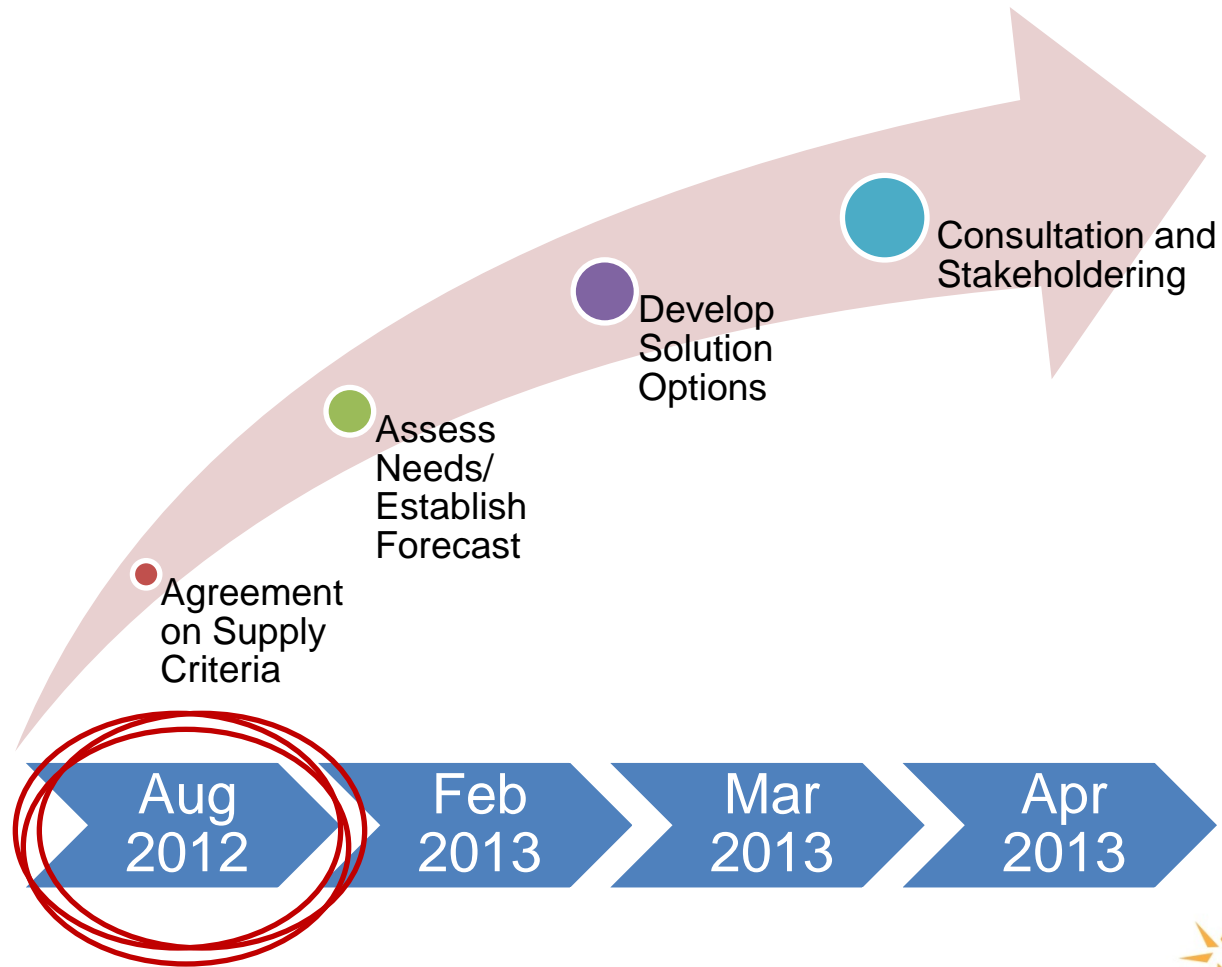
- Emphasis on requirements for the first seven years (near-term)
- Options for the next seven to twelve years (mid-term)
- 25-year long-term

The plan focuses on the City of Toronto's long-term security of supply and analyzes options including, **transmission, DG, conservation, demand response**, etc.

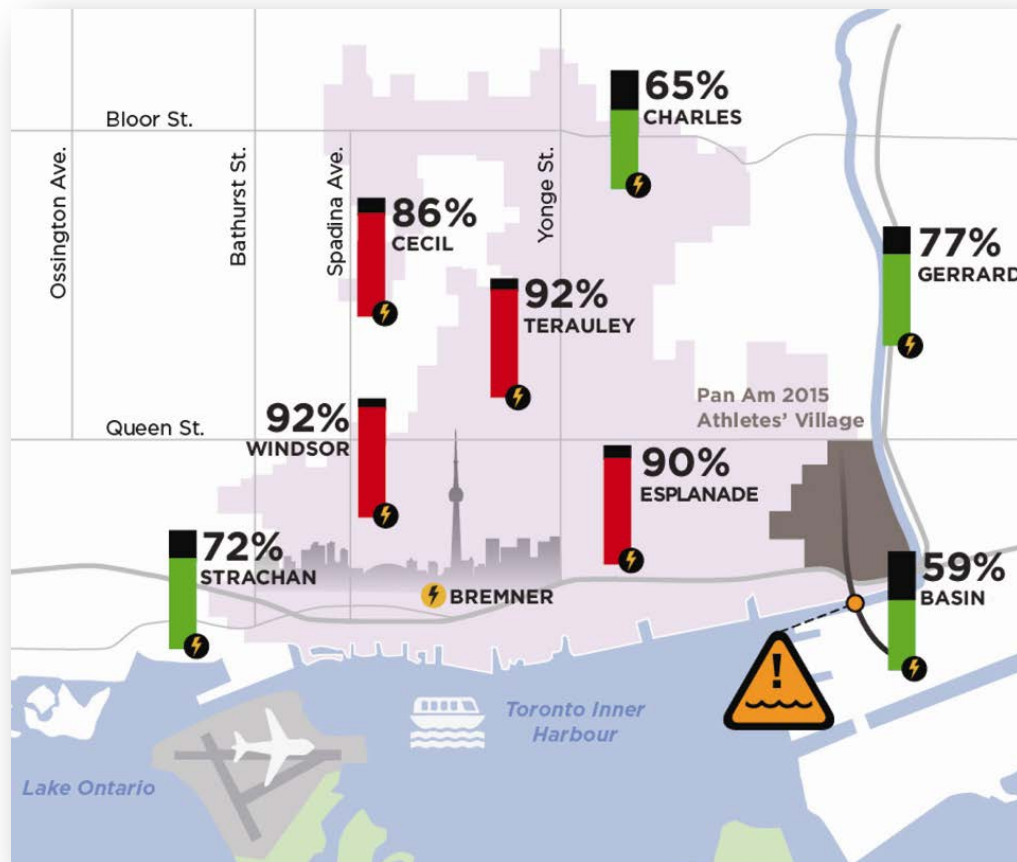
Toronto Hydro is working in partnership with the City (through the Toronto Environment Office) to develop a stakeholder consultation plan (meeting planned for first week of November) and to ensure the City and Toronto Hydro advocate from a shared position.



Power Supply and Grid Management Toronto Regional Plan Timeline



Power Supply and Grid Management



THE GLOBE AND MAIL



Can your neighbourhood survive Toronto's condo boom?

STUART A. THOMPSON

The Globe and Mail

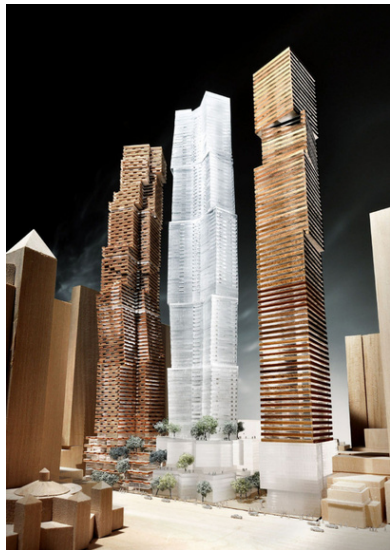
Published Friday, Oct. 12 2012, 8:08 PM EDT

Last updated Friday, Oct. 12 2012, 8:17 PM EDT



Grid Management

Load Intensification



Approximate # Highrises Under Construction*		
1	Toronto	189
2	Mexico City	88
3	New York City	82
4	Chicago	24
5	Houston	22

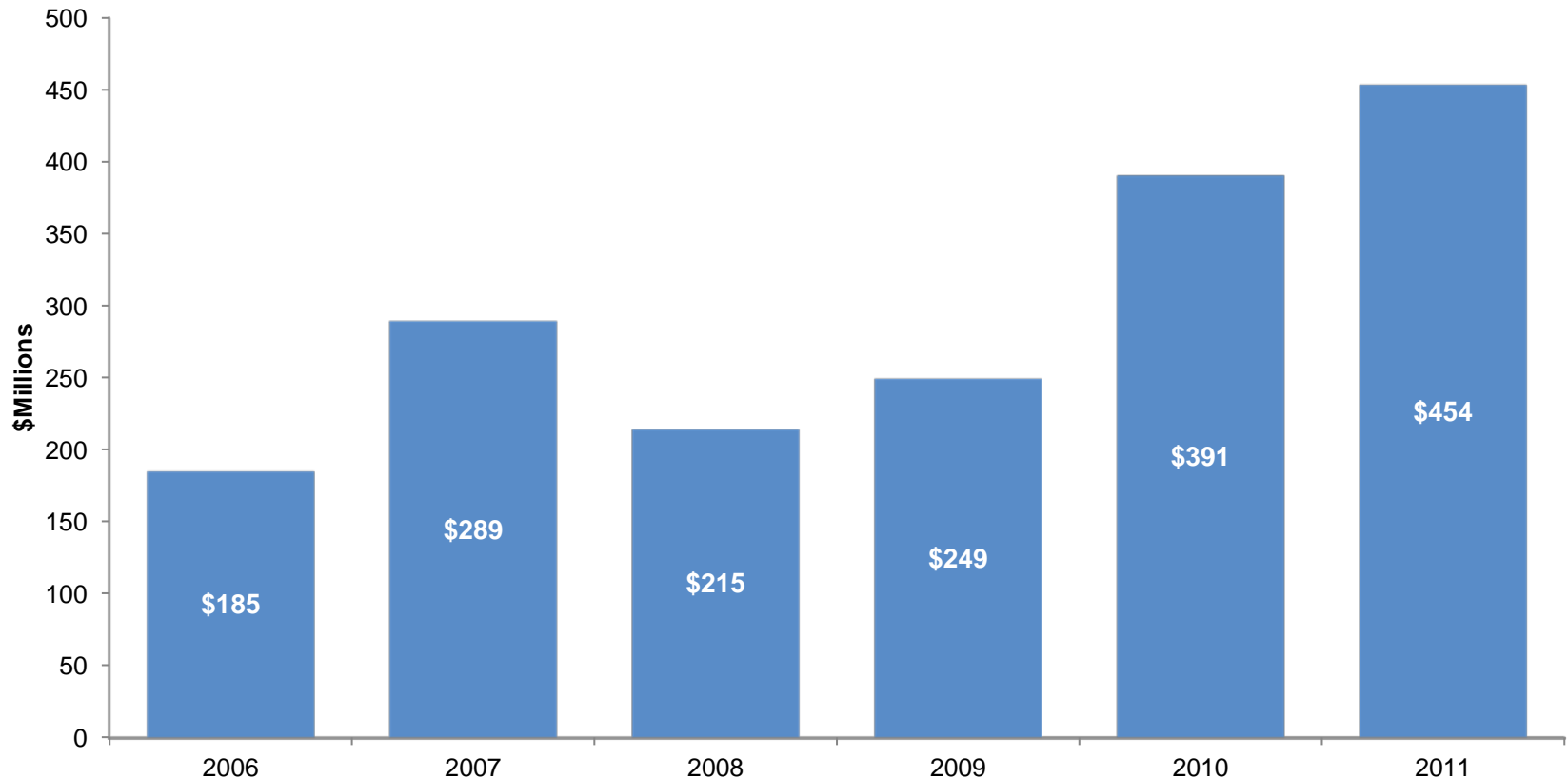
- 58% increase in connection requests since 2009
- Impact of electric vehicle charging on local distribution systems



* Source: Emporis, June 1, 2012

Power Supply and Grid Management

State of Good Repair - Capital Investment



Power Supply and Grid Management

OEB: Renewed Regulatory Framework for Electricity

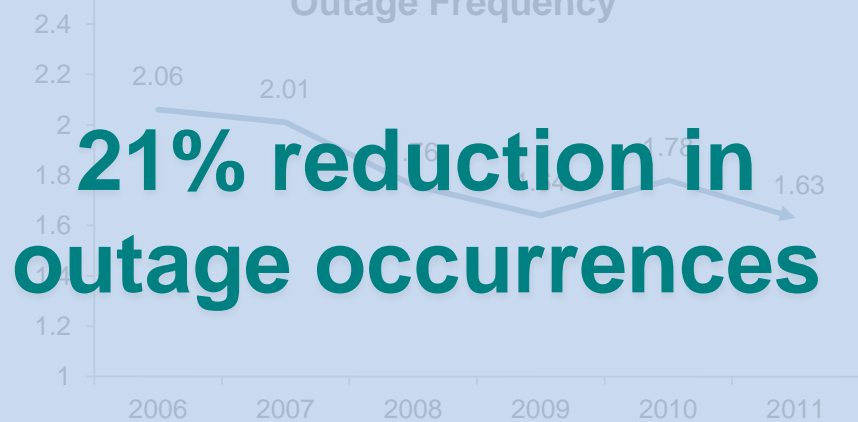
“The Custom IR rate setting option is intended to be customized to fit individual distributor circumstances. The custom method will be most appropriate for distributors with large multi-year investment commitments over a five year period or more. Rate setting under the Custom IR method will be informed by a distributor’s individual application including forecasted expenditures, inflation and productivity”

Rosemarie T. Leclair
CEO - OEB

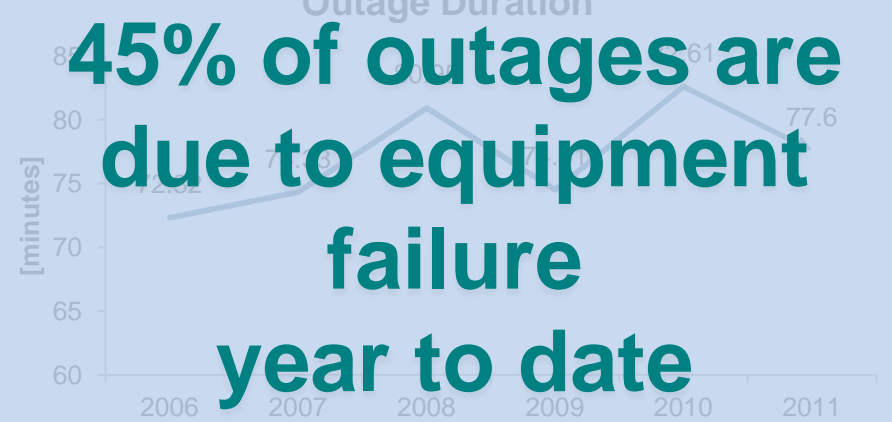


Grid Management Infrastructure Challenges

Outage Frequency



Outage Duration



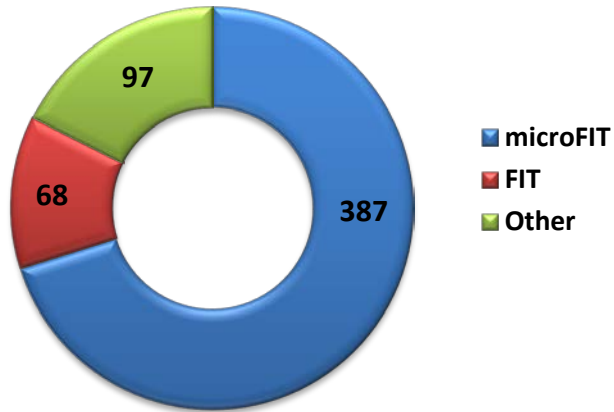
Worst Performing Feeders



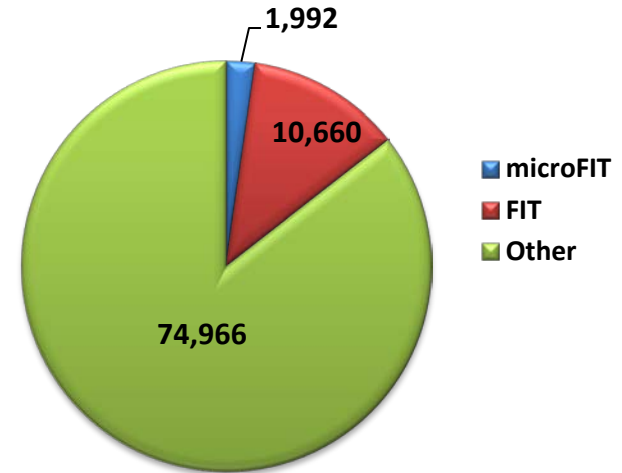
Grid Management

Distributed Generation in Toronto

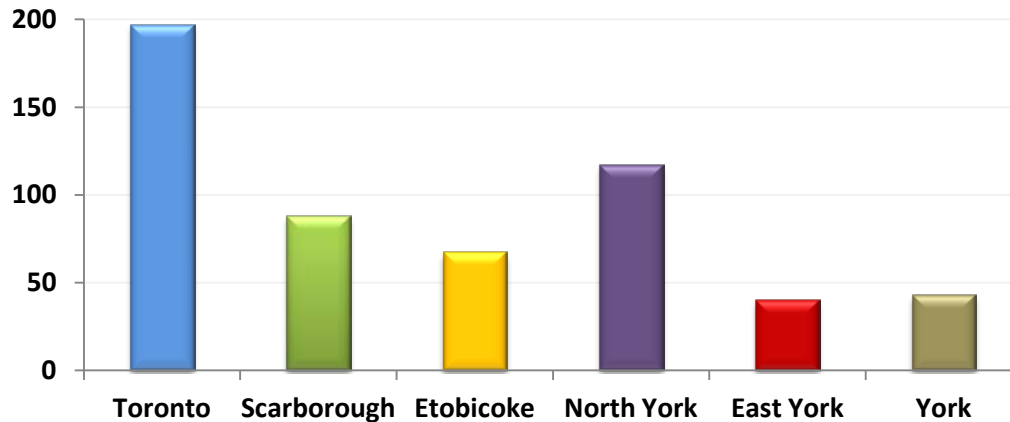
Number of Connections by Program



Total Generation (kW) by Program



Number of Connections by Region



- Total Number of Projects = 552
- Total Connected DG = 87.6 MW

Legend

- microFIT: ≤ 10 KW
- FIT: >10 kW ≤ 10 MW
- Other: Gas co-gen, diesel back-up systems, and fuel cell



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Rates

Residential Electricity Rates in Toronto Compared with Other Cities

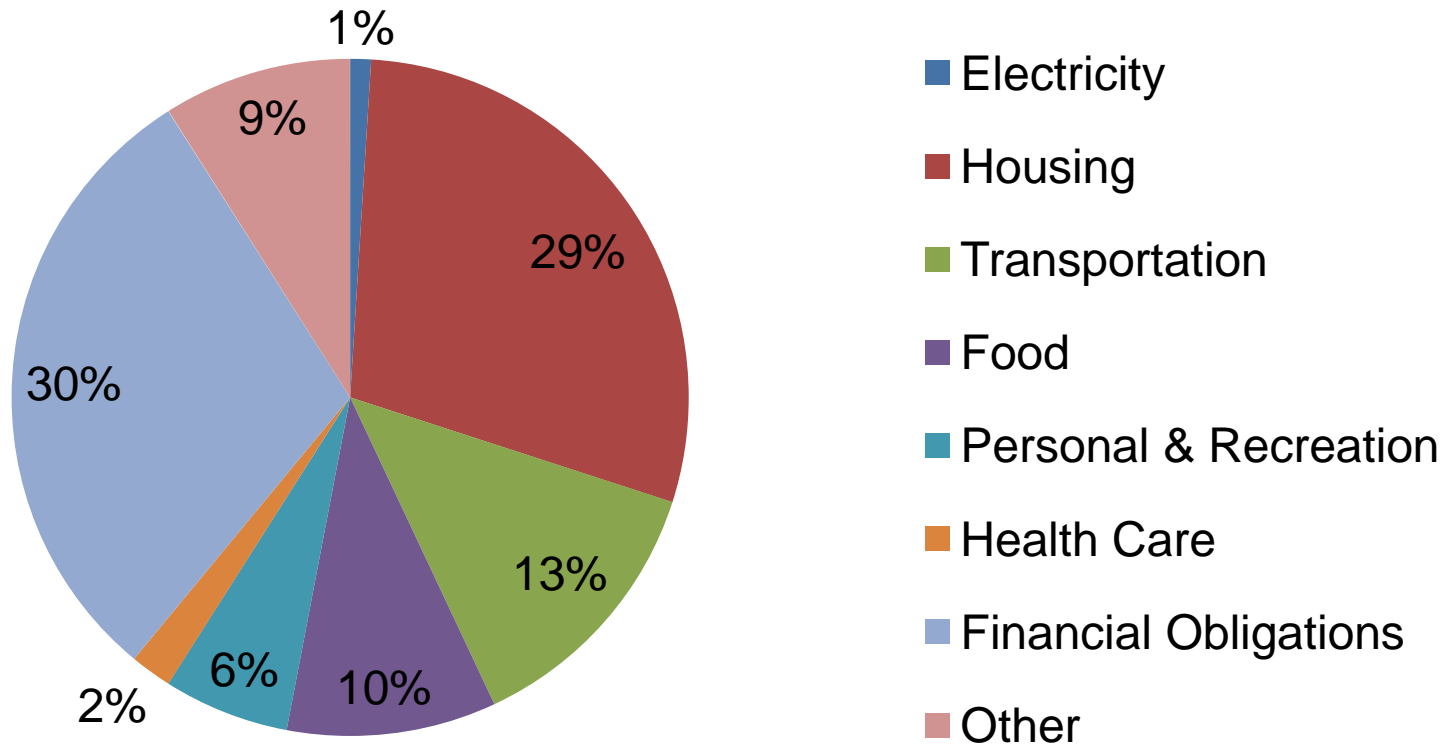
City	Average Monthly Bill (\$US)	Country
Toronto	100.0	
Rome	114.1	
Zurich	171.6	
Hong Kong	193.1	
Barcelona	212.5	
London	221.5	
New York	225.0	
Helsinki	250.0	
Tokyo	326.0	
Paris	351.3	

Source: Economist Intelligence Unit, 2010



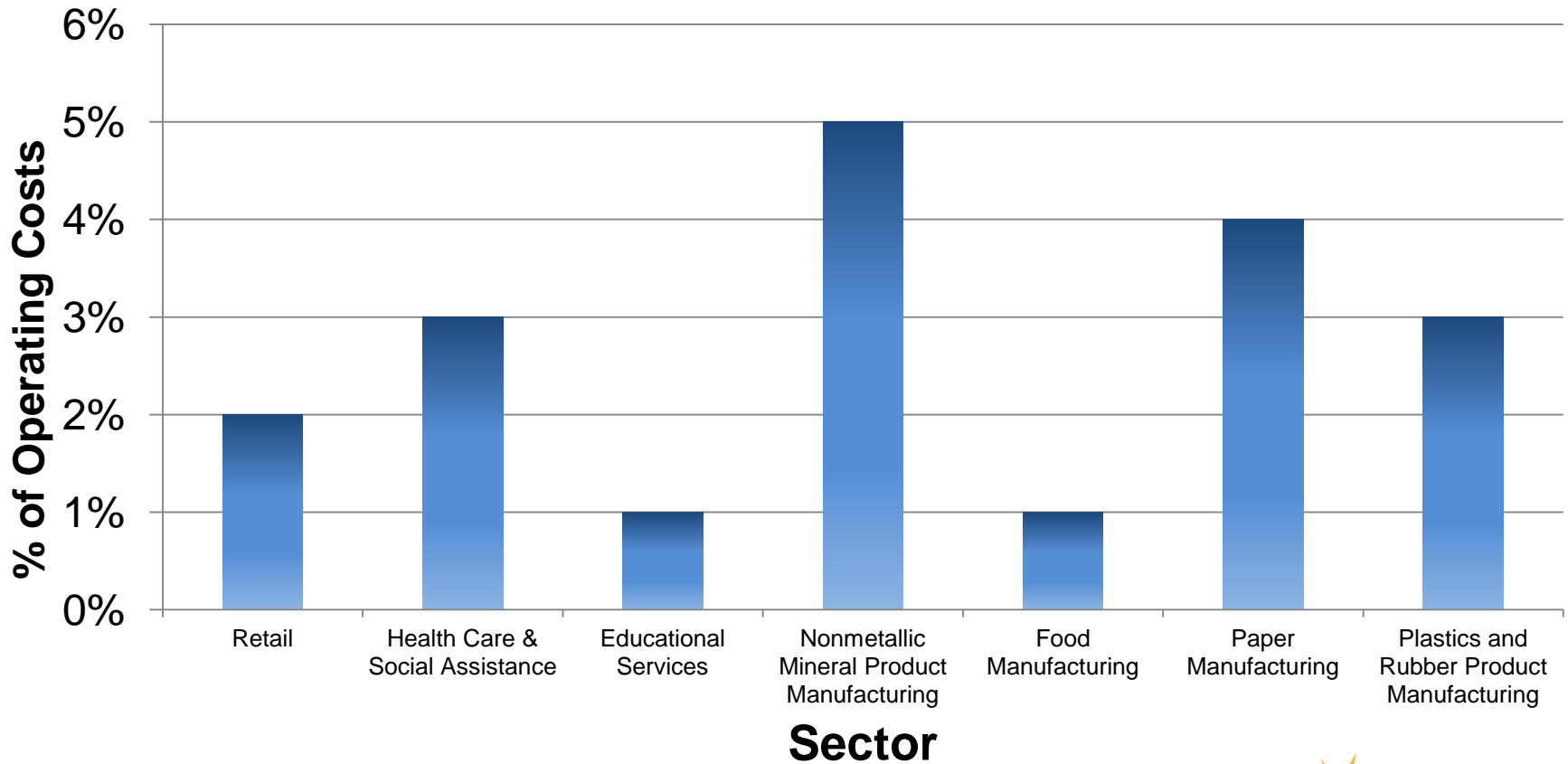
Rates

Electricity Relative to Overall Household Spending



Rates

Electricity Relative to Overall Operating Costs in Commercial and Industrial Sector

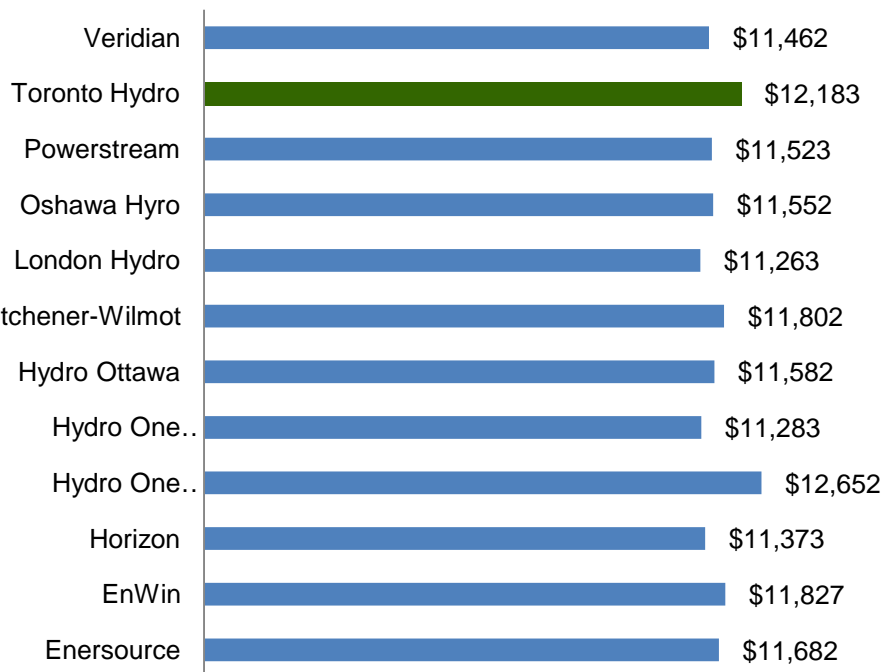


Source: U.S. Census Bureau, Sector 31: Manufacturing: Summary Series: General Summary: Detailed Statistics by Subsectors and Industries: 2007

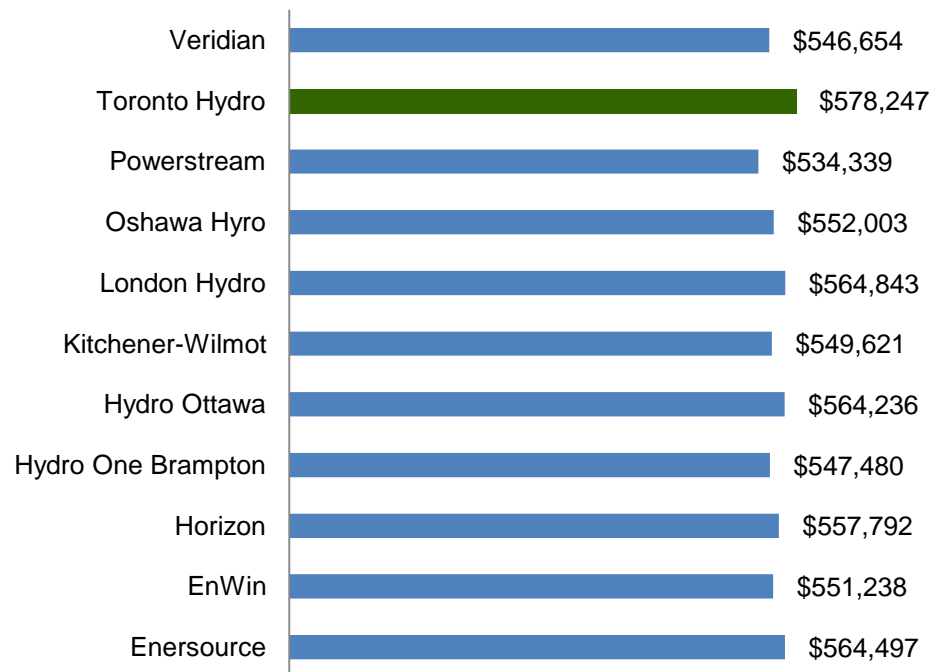
Rates

Toronto Hydro Compared with Other Jurisdictions

Commercial Rate Class 50 KW> (250kW)



Large User Rate Class (10 MW)



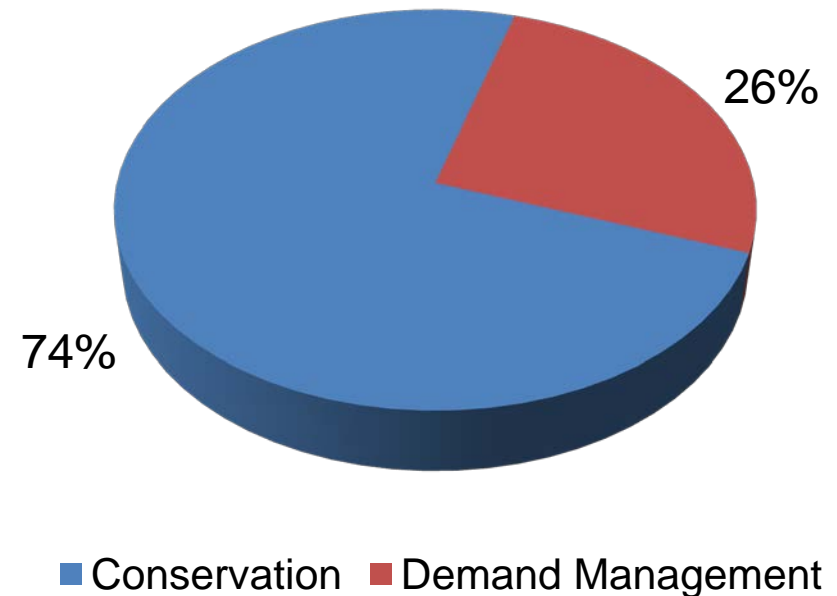
Rates

Conservation and Demand Management (CDM)



- CDM is a good investment and helps to offset rate increases and maintain competitiveness
- CDM projects typically produce annual electricity cost savings of 5-15%
- CDM incentive typically offset an average of 40% of project cost

Toronto Hydro's CDM Strategy



Rates

Historical Bill

Distribution Bill -- Residential (800 kWh/Month)

	2005	2006	2007	2008	2009	2010	2011	Compound Annual Average
Distribution	29.72	27.31	27.64	27.98	28.32	30.39	29.50	-0.12%
Transmission	8.63	8.47	8.47	8.22	8.72	9.94	10.09	2.64%
Regulated Charges	11.00	11.00	11.00	11.00	11.25	11.55	11.25	0.37%
Commodity	41.50	45.65	41.50	46.48	53.62	57.77	66.57	8.19%
GST/HST	6.36	5.55	5.32	4.68	5.10	14.26	15.26	15.71%
Total Bill before OCEB	\$97.21	\$97.97	\$93.92	\$98.36	\$107.00	\$123.92	\$132.67	5.32%
Ontario Clean Energy Benefit							\$13.27	
Net Total Bill	\$97.21	\$97.97	\$93.92	\$98.36	\$107.00	\$123.92	\$119.41	3.49%



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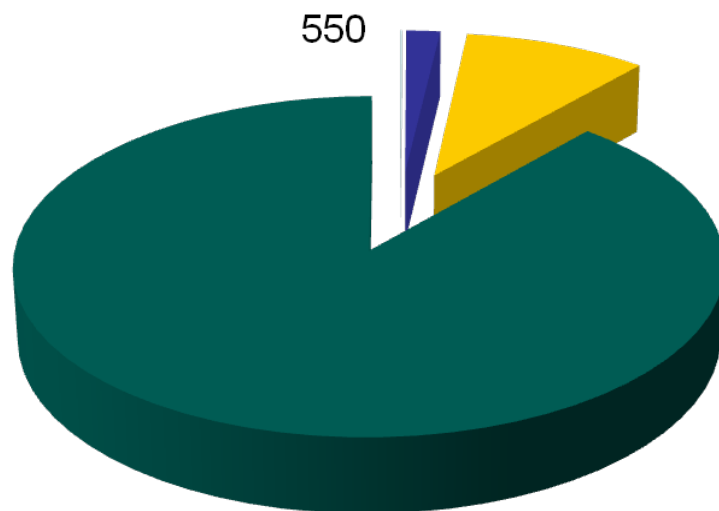
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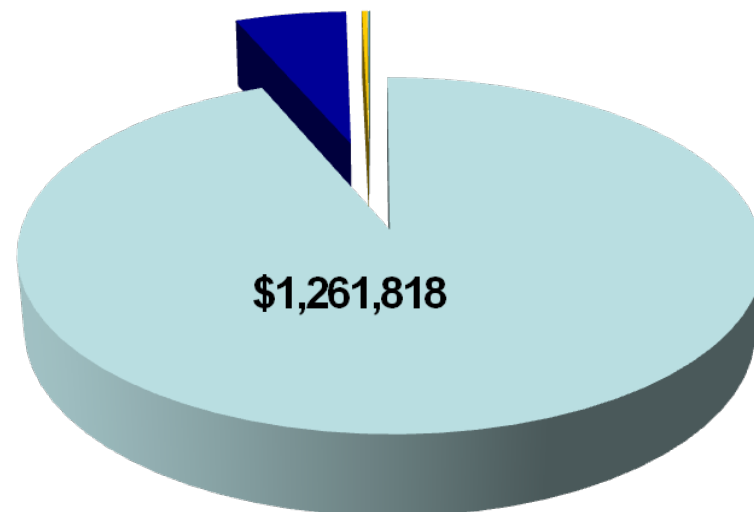
Key Account Management Services

Customer Profile

Total Customers



Revenue per Customer



<u>Customer Segment</u>	<u>Total Revenue</u>	<u>Total Customers</u>	<u>Revenue Per Customer</u>
Large Business >1,000 KW	\$694million	550	\$1,261,818
Medium Business 50-1,000 KW	\$1,075 million	12,463	\$86,255
Small Business <50 KW	\$294 million	67,261	\$4,371
Residential <50 KW	\$704 million	629,049	\$1,119
	\$2,767 million	709,323	

Key Account Management Services

Customer Care

Residential

- Well trained Customer Service Agents during business hours
- First call resolution and service quality performance management
- Outage management services – Report an outage and on-line outage mapping
- Access to TOU data and on-line tools to manage energy consumption, transactions and accounts.
- CDM programs to help lower consumption and costs
- On-line energy calculators and mobile applications

Commercial and Industrial

- Specialized Customer Service Agents – extended business hours
- Dedicated Key Account Managers offering a single point of contact for all account-related issues
- Enhanced outage management services (24/7 access to key account staff)
- Access to interval data and energy management on-line tools
- CDM programs to help lower consumption, costs and increase competitiveness
- Embedded Energy Managers offering expertise to help identify and implement saving opportunities



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Community Builder

500 Jobs

Creation of approximately 5,000 direct & indirect person-years of employment in Ontario from 2011

\$50 Million

Average annual dividend paid to the City of Toronto

438k tons CO₂

Contributed to the Green Energy Act and the City's Climate Change Plan to phase out coal plants by 2014

Thank You



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