

ELECTRICITY DISTRIBUTORS ASSOCIATION

EDA – THE VOICE OF ONTARIO'S ELECTRICITY DISTRIBUTORS



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www.eda.on.ca

MESSAGE FROM THE PRESIDENT AND CEO

In recent years, Ontario's electricity system has undergone unprecedented change characterized by the movement away from a competitive market model to a 'hybrid' model aimed at balancing competition and regulation in the industry. As this market has continued to evolve, the roles and responsibilities of the province's electricity distributors have also continued to evolve, particularly in terms of conservation and demand management (CDM) activities.

The ongoing change in the industry continues to have direct economic, social and political impacts on a range of interests, including municipalities, residential customers and businesses of all sizes.

Local electricity distributors are a fundamental and vitally important part of Ontario's market, delivering safe and reliable power to homes and businesses across the province. The Electricity Distributors Association (EDA) represents the collective interests of Ontario's distributors, and advocates on their behalf.

The *Ontario Electricity Market Primer* provides comprehensive information on electricity distributors - who we are, what we do and the benefits we bring to the province and its local communities. This reference book also explains how the electricity market in Ontario operates and some of the more significant highlights of recent reform and restructuring of the sector.

This "get to know us and the issues" primer is provided to you as a fact-based information resource.

We welcome any questions that you may have. Please feel free to call me, or any of our staff, at 905-265-5300, or visit our website at www.eda-on.ca.

Yours truly,



Charlie Macaluso
President and CEO, Electricity Distributors Association



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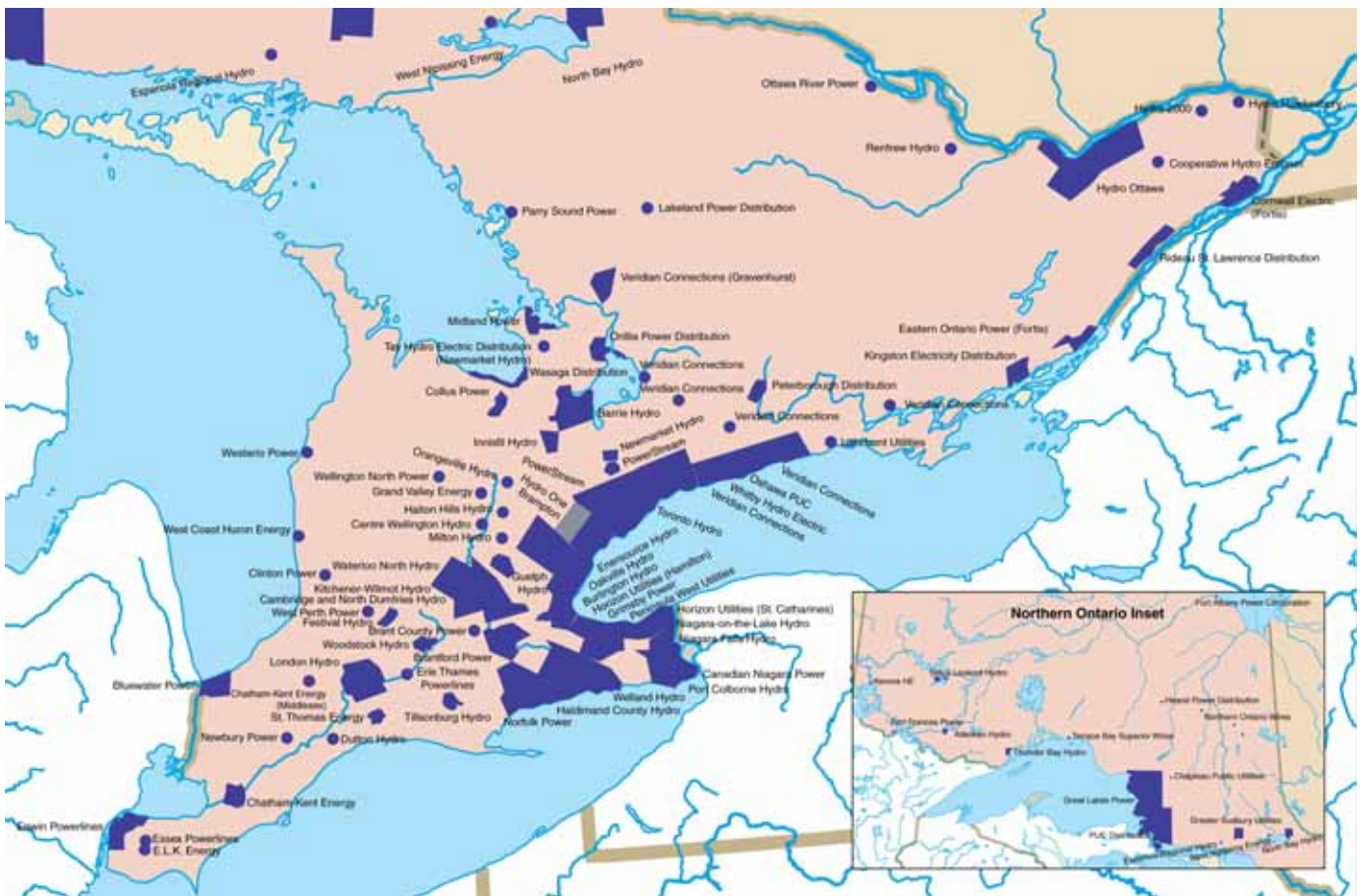
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i. What is the EDA?

The Electricity Distributors Association (EDA) is the voice of Ontario's local electricity distributors, the publicly and privately owned companies that safely and reliably deliver electricity to over four million Ontario homes, businesses and public institutions.

The EDA provides members with:

- Advocacy and representation in the legislative and regulatory environment and the electricity market in Ontario;
- Up-to-date, expert analysis of relevant legislation and market rules, with a particular focus on regulation;
- Networking opportunities for communication with professional and industry colleagues.



The map above illustrates an approximation of the service territories of Ontario's local distribution companies (LDCs). Hydro One serves all areas of the province not marked in blue.

ii. What is a Distributor?

Local electrical utilities, also known as local distribution companies (LDCs), take power from high-voltage transmission lines, “step-down” the electricity to a low-voltage level (50 kv and under), and provide it to local customers of all kinds: homes, businesses, institutions and industry.

The men and women connecting new homes and businesses to electricity supply, maintaining their community’s network of power lines and restoring them after storms.

An essential piece of any electricity system, and a key player in the economic development of Ontario. As cities and industries expand, distributors expand with them to facilitate their growth.

Businesses focused on the reliable and safe delivery of electricity. Electricity that is not provided at an appropriate voltage can damage machinery, impair digital devices and, in the case of a surge in voltage, cause catastrophic damage to computer systems.

Committed to electricity conservation, creating and implementing conservation programs across the province: saving consumers money, protecting our environment, and helping to solve Ontario’s energy supply challenge.

Both publicly and privately owned. They are regulated monopolies in their respective communities and service areas. The government, through its regulator the Ontario Energy Board, regulates the rates that distributors charge customers for the distribution service.

Closely linked to their communities because they:

- Facilitate and promote economic development;
- Maintain their community’s system of electricity wires;
- Are the primary electricity billing agent, dealing directly with residents and small businesses;
- Develop and implement conservation and demand management (CDM) programs for local customers; and,
- Are mostly municipally owned.

iii. How Do Distributors Impact Ontario?

Distributors deliver significant economic benefits to Ontario each year by:

- Providing jobs for almost ten thousand Ontarians;
- Stimulating Ontario's economy through a payroll of nearly \$1 billion;
- Investing almost \$1 billion in Ontario's infrastructure;
- Providing over \$364 million to our shareholders, Ontario's municipalities, and through them to their residents;
- Contributing over \$199 million, through proxy taxes to the provincial government, against the stranded debt of the former Ontario Hydro;
- Saving Ontario individuals and businesses in electricity costs through conservation programs – money which directly impacts the economy through increased spending, saving and investing;
- Donating over \$1 million to local Ontario charities and community groups.

Distributors' Annual Economic Contribution to Ontario:

| | | |
|--|-----------------------|----------------------|
| Total Asset Base | | \$14 billion |
| Total Annual Revenue | | \$3.6 billion |
| Total annual income generated | | \$390 mil |
| Payments-in-Lieu of Taxes: (Proxy taxes to the provincial government) | | \$199 mil |
| Contributions to Municipalities: | | \$364 mil |
| Charity & Community Sponsorships: | | \$1.2 mil |
| Customers: | 4,500,000 | |
| | Homes: | 3,500,000 |
| | Commercial Customers: | 1,000,000 |
| Jobs: | | 9600* |

* Direct and contract employees.

iv. Who Are Ontario's Distributors?

Atikokan Hydro Inc.
www.athydro.com

Barrie Hydro Distribution Inc.
www.barriehydro.com

Bluewater Power Distribution Corp.
www.bluewaterpower.com

Brant County Power Inc.
www.brantcountypower.com

Brantford Power Inc.
www.brantpower.on.ca

Burlington Hydro Inc.
www.burlingtonhydro.com

Cambridge and N. Dumfries Hydro Inc.
www.camhydro.com

Canadian Niagara Power Inc.
(FortisOntario) www.cnpower.com

Centre Wellington Hydro Ltd.
www.cwhydro.ca

Chapleau Public Utilities Corp.

Chatham-Kent Energy Inc.
www.ckenergy.com

Clinton Power Corp.

Collus Power Corp.
www.collus.com

Cooperative Hydro Embrun Inc.

Cornwall Electric (FortisOntario)
www.fortisontario.com

Dutton Hydro Ltd.

E.L.K. Energy Inc.
www.elkenergyinc.com

Eastern Ontario Power (FortisOntario)
www.fortisontario.com

Enersource Hydro Mississauga Inc.
www.enersource.com

ENWIN Powerlines Ltd.
www.enwin.com

Erie Thames Powerlines Corp.
www.eriethamespower.com

Espanola Regional Hydro Distribution Corp.
www.erhydro.com

Essex Powerlines Corp.
www.essexpower.ca

Festival Hydro Inc.
www.festivalhydro.com

Fort Albany Power Corp.

Fort Frances Power Corp.

Grand Valley Energy Inc.

Great Lakes Power Ltd.
www.glp.on.ca

Greater Sudbury Utilities Inc.
www.shec.com

Grimsby Power Incorporated

Guelph Hydro Electric Systems Inc.
www.guelphhydro.com

Haldimand County Hydro Inc.
www.haldimandcountyhydro.ca

Halton Hills Hydro Inc.
www.haltonhillshydro.com

Hearst Power Distribution Co. Ltd.

Horizon Utilities
www.horizonutilities.com

Hydro 2000 Inc.

Hydro Hawkesbury Inc.

Hydro One Brampton Networks
www.hydroonebrampton.com

Hydro One Networks Inc.
www.HydroOne.com

Hydro One Remote Communities Inc.
www.HydroOne.com

Hydro Ottawa Limited
www.hydroottawa.com

Innisfil Hydro Distribution Systems Ltd.
www.innisfilhydro.com

Kenora HE Corp. Ltd.

Kingston Electricity Distribution Ltd.
www.utilitieskingston.com

Kitchener-Wilmot Hydro Inc.
www.kwhydro.on.ca

Lakefront Utilities Inc.
www.lusi.on.ca

Lakeland Power Distribution Ltd.

Midland Power Utility Corp.
www.midlandpuc.on.ca

Milton Hydro Distribution Inc.
www.miltonhydro.com

Newbury Power Inc.

Newmarket Hydro Ltd.
www.nmhydro.on.ca

Niagara-on-the-Lake Hydro Inc.
www.notlhydro.com

Niagara Falls Hydro Inc.
www.niagarafallshydro.on.ca

Norfolk Power Distribution Inc.
www.norfolkpower.on.ca

North Bay Hydro Distribution Ltd.
www.northbayhydro.on.ca

Northern Ontario Wires Inc.
www.puc.net

Oakville Hydro Corp.
www.oakvillehydro.com

Orangeville Hydro Ltd.
www.orangevillehydro.on.ca

Orillia Power Distribution Corp.
www.orilliapower.ca

Oshawa PUC Networks Inc.
www.opuc.on.ca

Ottawa River Power Corp.
www.orpowercorp.com

Parry Sound Power Corp.

Peninsula West Utilities Ltd.
www.penwest.on.ca

Peterborough Distribution Inc.
www.puc.org

PowerStream Inc.
www.powerstream.ca

PUC Distribution Inc.
www.ssmppuc.com

Renfrew Hydro Inc.

Rideau St. Lawrence Distribution Inc.

St. Thomas Energy Inc.
www.sttenergy.com

Sioux Lookout Hydro Inc.

Terrace Bay Superior Wires Inc.

Thunder Bay Hydro Electricity Distrib. Inc.
www.tbhydro.com

Tillsonburg Hydro Inc.
www.town.tillsonburg.on.ca

Toronto Hydro-Electric System Ltd.
www.torontohydro.com

Veridian Connections Inc.
www.veridan.on.ca

Wasaga Distribution Inc.

Waterloo North Hydro Inc.
www.wnhydro.com

Welland Hydro Electric System Corp.
www.wellandhydro.com

Wellington North Power Inc.

West Coast Huron Energy Inc.

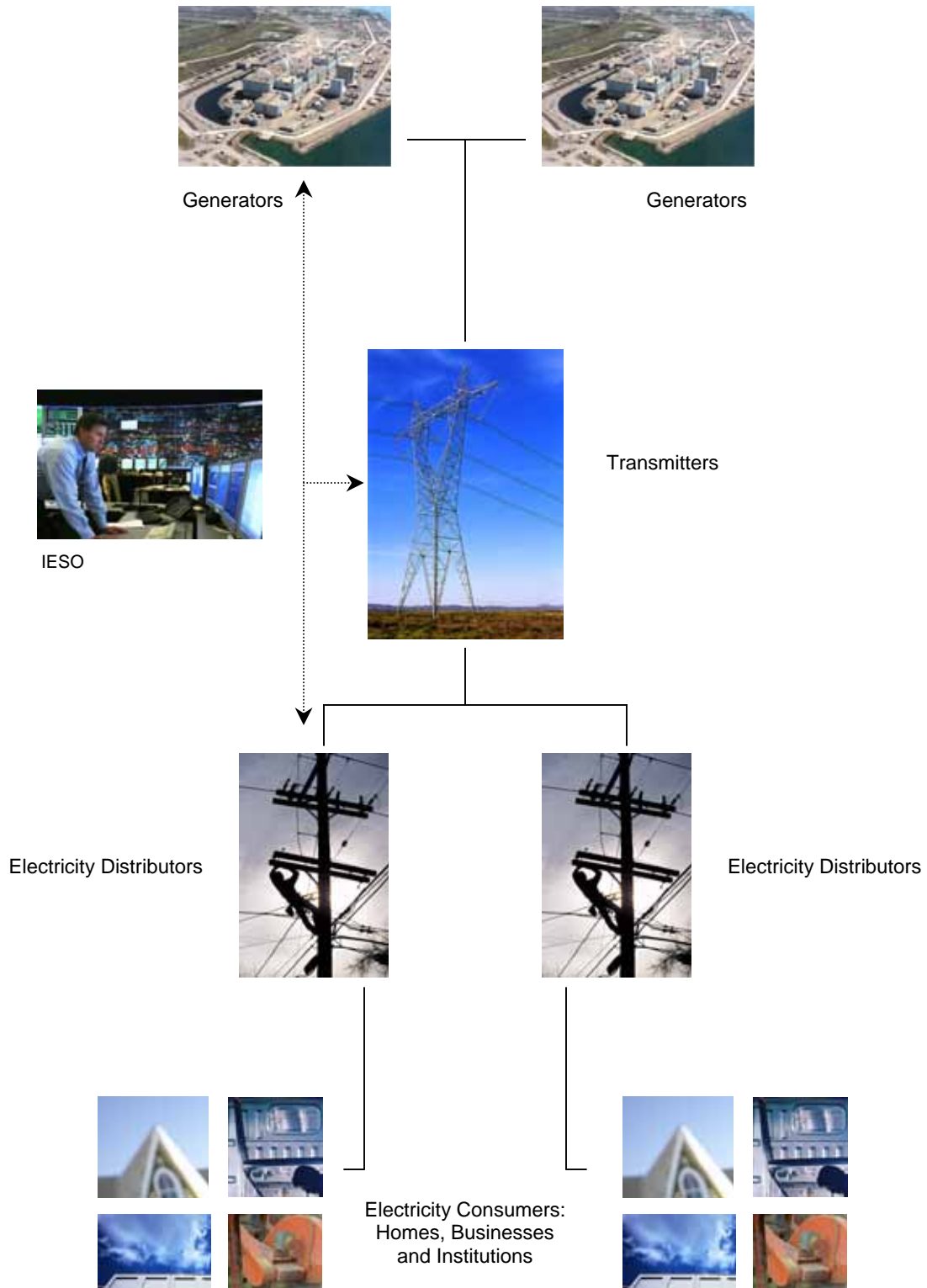
West Perth Power Inc.

Westario Power Inc.
www.westario.com

Whitby Hydro Electric Corp.
www.whitbyhydro.on.ca

Woodstock Hydro Services Inc.
www.woodstockhydro.com

II. The Ontario Electricity Market



i. Who Are the Market's Participants?



Generators. Generators produce the electricity that we use. The Ontario government through its energy sector regulator, the Ontario Energy Board, has issued approximately 130 generating licenses. However, approximately 70% of the electricity in the province is produced by Ontario Power Generation (OPG), a successor company to the former Ontario Hydro.

Most of the remainder of our electricity is produced by the Bruce nuclear station, which is leased by the provincially owned generator, Ontario Power Generation, to a private consortium called Bruce Power. Other smaller generators are generally renewable energy (e.g., wind and hydro electric) plants, and industrial facilities that produce power on-site for internal use.



Transmitters. Electricity is transmitted over high-voltage transmission lines between the generating station and the local distribution area where the electricity is to be used. Hydro One, another successor company of the former Ontario Hydro, owns and operates most of the transmission lines in Ontario. This is in addition to its role as a distributor in certain parts of the province (see below).

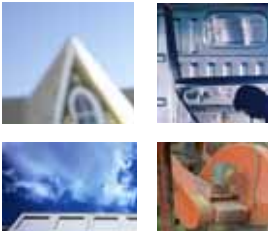


Distributors. The role of distributors is to take electricity from high-voltage transmission lines and safely provide it to homes and businesses, at an appropriate voltage, throughout the local distribution area. Distributors also act as an interface between customers and the electricity market by:

- Providing electricity at the prevailing regulated rate to customers who have not signed contracts with retailers;
- Acting as customers' primary billing agent, including most of the customers who have signed retail contracts;
- Providing customer service through regular repair and maintenance, call centres, education campaigns and emergency response; and
- Creating and implementing conservation programs in their local communities.



Retailers. These are companies licensed to sell electricity. Retailers do not participate in the actual physical delivery of electricity, but act as financial intermediaries. Retailers allow customers to sign long-term fixed-price electricity contracts. Distributors are permitted to establish retail affiliates, through separate retail companies.



Consumers. Electricity consumers vary in size from small residences to major manufacturing plants. Residential and small volume consumers purchase electricity from their local distributor, or from a retailer.

Large volume consumers have some more choices open to them, as they may purchase electricity directly in the wholesale (*spot*) market. They may also enter into direct financial agreements with particular generators or retailers, in order to manage their exposure to fluctuations in the market price.



Independent Electricity System Operator (IESO). The IESO operates a virtual marketplace: a financial clearinghouse for buyers and sellers of electricity. It is also a near-term system controller, forecasting how much electricity will be needed and telling generators how much power they can send into the province's interconnected grid of transmission lines, and when they may do so (a function called dispatching). The IESO performs this financial and dispatch function every five minutes. The IESO plays a vital role in operating the competitive wholesale electricity market. The board of the IESO is made up of industry stakeholders and independent directors, all of whom are individually appointed by the government.

ii. Other Players

Ontario Energy Board (OEB)

The OEB is an independent government agency. It serves as the electricity market regulator, and also acts as a quasi-judicial decision-making tribunal.

The OEB approves the delivery rates that are charged by distributors and the transmitter (Hydro One) for the distribution and transmission of electricity in the province, and licences market participants. The OEB also ensures participants are in compliance with all of the laws and regulations that govern the electricity market.

The board of the OEB is made up of government appointees. As an economic regulator, board members are independent and not industry stakeholder appointees. The OEB receives input on its operations and priorities from the Stakeholder Advisory Committee appointed by the Minister of Energy.

Ontario Power Authority (OPA)

The OPA was established in December 2004 and is responsible for long-term power system planning and ensuring an adequate, reliable supply of electricity in Ontario. The OPA is also responsible for activities to promote and support the building of a conservation culture, ensuring adequate investment levels in new supply infrastructure and facilitating policy stability by ensuring residential and small commercial customers receive predictable pricing that reflects market conditions.

Conservation Bureau

The Bureau is a part of the OPA and is headed by the province's Chief Energy Conservation Officer (CECO). Its purpose is to provide leadership for the planning and coordination of conservation in the province. The CECO assumes leadership for advising on relevant government policy and targets for conservation, educating and promoting energy conservation, and measuring and tracking energy conservation performance.

Electrical Safety Authority (ESA)

The ESA is an independent, not-for-profit corporation that is responsible under provincial law for public electrical safety in Ontario. The ESA promotes the safe use of electricity and provides a range of inspections and product approvals in accordance with safety codes. Its board, appointed by the government, is made up of industry stakeholders.

iii. Glossary of Terms

Bill 35. The *Energy Competition Act, 1998*, which enacted the Electricity Act and the Ontario Energy Board Act. This legislation set the legal framework for restructuring the old Ontario Hydro into successor companies, commercialization of the distribution industry, and the opening of the competitive wholesale market in electricity.

Bill 58. The *Reliable Energy and Consumer Protection Act, 2002*. This Act amended the Electricity Act by, among other things, creating an “Energy Consumer’s Bill of Rights”, which sought to protect consumers from the unscrupulous business practices of some retailers.

Bill 210. The *Electricity Pricing, Conservation and Supply Act, 2002*. Most significantly, this legislation froze the price of electricity at 4.3 cents per kWh for small volume (e.g. residential) and designated consumers (such as hospitals). This law was a response to the wildly fluctuating spot market electricity prices that consumers were subjected to in mid-2002. Bill 4 and Bill 100 mark the final departures away from this unsustainable regime to one based more on long-term supply contracts, which provide stable prices for consumers.

Bill 23. The *Ontario Energy Board Consumer Protection and Governance Act, 2003*, established a new set of guiding principles for the Ontario Energy Board. Most notably, this Act established the OEB as a standalone crown agency and created a stakeholder advisory committee that reviews annually the OEB’s performance standards. The Act also calls for an annual regulatory calendar with a statement of priorities to increase the OEB’s accountability and ensure stringent timelines for decisions are established.

Bill 4. The *Ontario Energy Board (Electricity Pricing) Act, 2003*. Enacted in December 2003, this law set the stage for changes to the price of electricity, the price of distribution of that electricity, and the creation of conservation programs.

Bill 100. The *Electricity Restructuring Act, 2004* created the Ontario Power Authority to engage in long-term planning for Ontario’s electricity system by, among other things, entering into contracts for new supply (see above). The OPA’s Conservation Bureau appointed a Chief Energy Conservation Officer with a mandate to develop, coordinate and stimulate electricity conservation and demand management. The Act also strengthened the independence of rule-making in the electricity market by giving the Ontario Energy Board (OEB) ultimate authority over this area. Most importantly for Ontario’s consumers, the OEB was assigned the responsibility to develop the stable, tiered pricing system that was alluded to the previous year in Bill 4.

Bill 21. The *Energy Conservation Responsibility Act, 2006* provides the framework for the government’s commitment to install 800,000 smart meters in Ontario homes by 2007, and in all other homes and businesses by 2010. Under the bill, ministries, agencies and broader public sector organizations will be required to prepare energy conservation strategies on a regular basis, and report on energy consumption, proposed conservation measures, and progress on achieving results.

Clean energy. This term refers to electricity generating facilities that use fewer resources and produce fewer emissions than traditional power plants. Many clean energy facilities involve renewable (that is, endless) energy sources, such as water or wind. However, clean energy facilities include projects such as landfill gas (methane) and cogeneration, which uses natural gas and other fuels in a very efficient manner.

Conservation and Demand Side Management (CDM). Describes activities that either reduce the amount of electricity consumed (conservation), or the time at which it is consumed (demand-side management). Local distributors develop and implement CDM programs for their customers and also work with the OPA to offer province-wide programs.

Debt Retirement Charge. To pay off the residual portion of the former Ontario Hydro “stranded debt” (see above), electricity customers all pay a debt retirement charge, which is a separate itemized charge on every electricity bill. The charge for a residential customer is 0.7 cents/kWh.

Distributed Generation: Is a system in which electricity is produced by small to medium-sized generators connected to distribution systems. Distributed generation can decrease transmission distances thus often reducing losses; can supply power at low voltage for more efficient transmission; and, and increase the resilience of the power grid. Common technologies for distributed generation include small-scale wind or hydroelectric plans, or natural gas cycle plants.

Distribution system. The distribution system is a network of wires that delivers electricity from high voltage transmission lines to local communities.

Electricity. A form of energy associated with the movement of electrons and protons. Electricity is not something we are able to store: i.e., it must be used as it is produced. Electricity markets are consequently much more complex, and are inherently subject to more volatility, than markets for storable commodities such as natural gas, oil or grain.

Federal Energy Regulatory Commission – United States (FERC). FERC is an independent regulatory agency of the United States Department of Energy. FERC is responsible for many of the same regulatory responsibilities as our own OEB. This agency is relevant for Ontarians because of the emergence of an interconnected electricity market in northeastern North America. FERC proposals and standards have an impact on how we can access that market, both for imports and exports.

Hourly Spot Price. This is the hourly price for electricity in the IESO-administered wholesale electricity market. This price changes from hour-to-hour, day-by-day, season to season. The electricity spot market has an active and passive component. Wholesale sellers (generators) submit offers and wholesale buyers actively submit bids for electricity in different quantities and prices for each hour. In contrast, the offers of sellers are also balanced against the aggregate demand (“load”) projected for consumers who do not participate in the marketplace directly (e.g. homes and small businesses). The IESO calculates the spot price by balancing the supply of electricity with demand. As demand increases, or available supply decreases, the price of supply offers increase, which raises the spot price. As demand falls, or available supply increases, only less expensive offers from sellers are accepted, and prices drop.

IESO. The Independent Electricity System Operator (see “Market Participants”).

Incentive Regulatory Mechanisms (IRM), or Incentive Based Regulation: A regulatory methodology to encourage utility management to be efficient in the running of their business. The methodology puts a cap on LDC revenues, in order to incent utilities to produce and deliver electricity cost-effectively. In many instances, incentives are tied to service quality improvement. Also commonly referred to as Performance Based Regulation (PBR).

IPPs. Independent Power Producers are privately owned, non-utility generators. They are sometimes referred to as “merchant generators.”

Kilowatt Hour (kWh). A kilowatt-hour is the standard unit for measuring electricity energy. It is equal to 1,000-watt hours. Put another way, it is the energy consumed by ten 100-watt light bulbs in one hour. Most residential customers are currently billed for their electricity in cents per kWh.

Kilovolt. 1,000 volts.

LDC. Local Distribution Company, the term widely used in the industry to describe what were formerly known as municipal electric utilities. The distinction is important because LDCs are no longer subject to the *Public Utilities Act*, even though most are still owned by municipal shareholders. Rather, LDCs are governed by legislation specific to the electricity industry and to business corporations.

Long-term Contracts: Agreements for the purchase of power over a particular period. An electricity market that relies upon long-term contracts is distinct from one in which the spot market is the primary mechanism of bringing sellers and buyers together.

Market Rules: Until Bill 100, the IESO set and administered the market's rules, which set forth the formal terms and conditions for the operation of the power system and electricity market in Ontario. However, as a result of Bill 100 the OEB now has responsibility for all future changes to these rules, as well as their enforcement.

Market Power Mitigation Agreement (MPMA): When Ontario's new competitive market opened, the seller side of the market (i.e., generation) was almost entirely controlled by one company - Ontario Power Generation (OPG), a successor company to the old Ontario Hydro. The MPMA was a financial instrument created by the government to reduce the impact of OPG's “market power” (i.e., a dominant position vis-à-vis other Ontario generators). It essentially capped the prices that OPG received for its regulated assets (nuclear and large hydro plants) at 3.8 cents/kWh. But as of April 2005, a new system has been implemented to transition away from the MPMA, capping the price of electricity from regulated assets at 4.5 cents/kWh until April 2006.

Megawatt (MW). One thousand kilowatts.

OEB. The Ontario Energy Board (see “Other Players”).

Net Metering: Is available in Ontario to smaller 'qualifying facilities' of renewable energy sources such as wind or solar power. Under net metering programs, the local distributor will subtract the value of electricity a consumer supplies to the grid from the value of what they take from the grid. The electricity bill reflects the 'net' difference between the two amounts. Bi-directional meters measure the injection of power back into the system – the difference or net electricity used is then credited back to the 'net metered' customer.

OEFC. The Ontario Electricity Financial Corporation. This corporation was established by the government to hold the stranded debt belonging to the old Ontario Hydro. It also fulfills a financing role in the electricity market: for instance, by administering the Provincial Benefit (see above). The OEFC also incurs debt to pay for any differences between the Regulated Price Plan received by consumers (see above) and the price at which power has been purchased.

Ontario Hydro. the provincially owned corporation that formerly operated Ontario's generation assets and transmission system, as well as a large portion of distribution network. Ontario Hydro operated as a vertically-integrated monopoly, and was largely self-regulated.

OPA. Ontario Power Authority. (see "Other Players").

OPG. Ontario Power Generation. The old Ontario Hydro's generation assets were transferred to this new company, also owned by the government, in accordance with Bill 35.

Payments-in-lieu of Taxes (PILs). These are forms of proxy taxes paid by government-owned bodies, including distributors. Among the new PILs that have been imposed by the 1998 Electricity Act, some are designed to be approximately equal to federal and provincial corporate income and capital taxes. The money collected through PILs goes toward paying down the stranded debt, which is 100% held by the Province of Ontario through the OEFC.

Provincial Benefit. This is a funding mechanism created to deal with the presence of both regulated and spot market electricity prices in Ontario. Electricity customers who are not on the province's Regulated Price Plan (RPP, see below) pay the spot market price for electricity. This price is different than the actual price for electricity, which includes certain regulated power offerings, such as the generally lower-priced regulated power of certain Ontario Power Generation plants (see MPMA, above), or new generators which sell power based on a contracted price, not the fluctuating spot market price. In most cases, the average spot market price is above this "actual" price, and non-RPP consumers will receive a monthly payment. If the spot market price is below the actual price, then these consumers' Provincial Benefit will in fact be a debit.

Regulated Price Plan (RPP). Any consumer who does not choose to sign a contract with an electricity retailer will receive the government's Regulated Price Plan. This electricity plan aims to balance consumers' need for price stability with the province's need to provide incentives for conservation and wise use of electricity. The Plan achieves this through a tiered structure, in which pre-set prices increase once a certain threshold is passed (this threshold is different in winter and summer). The Plan does not apply to certain large consumers, such as large manufacturing companies, who must participate directly in the wholesale marketplace if they do not sign an electricity contract.

Retailer: A company that sells electricity or arranges transactions between or on behalf of electricity generators and customers. This is a financial transaction only, as the physical delivery of electricity is still carried out by distributors.

Retail Market: This encompasses those small volume consumers (those who use less than 250,000 kWh per year), such as residences and small businesses, who do not participate directly in the wholesale market – meaning those who do not purchase electricity directly from the IESO, or through a bilateral financial contract with a generator. The retail market is almost exclusively billed for its electricity by distributors, who pass through the prevailing market price of electricity to them.

Smart Meter: A new variety of electricity meter that can measure not only how much electricity a consumer uses, but when during the day it is used. Old meters simply measure aggregate use over the course of a month. Electricity costs more during peak periods (for example, in the early evening when people come home from work), so by allowing for more detailed measurement smart meters empower consumers to better manage their power consumption. If a consumer chooses to consume electricity when it costs less (for instance, at night), then they will be rewarded through a lower electricity bill. The government plans to install smart meters in every Ontario household by 2010.

Spot Market: This is the real-time market in which the Independent Market Operator matches supply and demand and sets the spot price for the electricity sold in that hour. The electricity spot market, as with any commodity, is distinguished from a forward market, in which future rights to a commodity are purchased. The difference between the electricity spot market and that for other commodities is that with electricity, the commodity is also consumed right away, as it cannot be stored.

Standard Offer Contracts: The Standard Offer program is being designed to promote participation of generation projects for small generators of clean, renewable energy that are embedded in a distribution system. Unlike net metering, qualified facilities of these projects will sell power back to the grid based on a contracted price. Under the plan, the Ontario Power Authority will purchase electricity produced by wind, biomass or small hydroelectric at a price of 11 cents per kWh, or 42 cents per kWh for solar energy. Under a Standard Offer contract, all small-scale renewable energy producers will be able to sell renewable energy to the grid for 20 years. The OPA and Ontario Energy Board are currently working together to facilitate the implementation of the standard offer program. The process will be finalized and incorporated in the fall of 2006.

Standard Supply Service: This is the default electricity supply and billing relationship between distributors and local customers that exists when customers do not choose to contract with electricity retailers.

Stranded Debt: This is the term for the total debt and liabilities accumulated by the former Ontario Hydro, less the debt assumed by its successor companies. The stranded debt is held by the Ontario Electricity Financial Corporation, and is to be paid down in several ways – through dividends from Ontario Hydro's successor companies (Ontario Power Generation and Hydro One), payments in lieu of taxes by distributors, and the debt retirement charge paid by consumers.

Transmission Lines: These are the high-voltage lines (over 50 kv) that carry electricity from generating stations to local distribution areas.

Unbundling: This refers to the separation of the details of all charges that go into a customer's electricity bill: *Electricity* (electricity consumed), *Delivery* (Distribution and Transmission charges), *Regulatory* (cost of administering wholesale electricity system and maintaining reliability of the grid), and, *Debt Retirement Charge* (fee charged to pay down the residual stranded debt of the former Ontario Hydro). For customers of the former Ontario Hydro, these charges were bundled together on customer bills.

Wholesale Market: The IESO-administered market in which electricity is sold to retail companies or provided to distributors, who pass through the price to their customers. If a company uses a very large amount of electricity, it may wish to participate in the wholesale market directly, purchasing power at the prevailing spot rate.

iv. How Does the Market Work?

Below is a simple description of how the competitive market has operated since its inception on May 1, 2002.

Generation. Generators are the sellers in the Ontario electricity market. They communicate with the Independent Electricity System Operator (IESO) to make electricity offers.

Dispatch and settlement. The IESO forecasts how much power will be needed at a given time, and constantly monitors changes in demand. At five-minute intervals, the IESO balances supply with demand. As more electricity is demanded, more expensive offers from generators are accepted by the IESO.

Each hour, the IESO takes the weighted average of these five-minute interval prices and sets the Ontario hourly spot price.

Flow of electricity. The physical energy is transmitted from generators to high-voltage transmission lines in accordance with IESO directions. Distributors then take the electricity from the transmission lines and deliver it to consumers, again in accordance with IESO directions.

Supply to consumers. The local distributor physically delivers the electricity and passes through the spot market price of the electricity directly to the customer. This is called Standard Supply Service (SSS, or "default service").

For consumers who have signed contracts with retailers, the retailers purchase the power through the IESO spot market, or directly from a generator, and charge the customer the price agreed to in the retail contract. As with default supply customers, the electricity is still physically supplied by the distributor; it is merely a financial transaction that flows through the retailer. In addition, distributors almost always maintain the direct billing relationship with the customer (see below).

The Bill. Retailers have the option of assuming the billing role with their customers (called "retailer consolidated billing"). However, almost all retailers currently rely on distributors to undertake the billing function for them. In this sense, distributors are the "default billers" for electricity customers.

As required by the OEB, each electricity bill is broken down into separate charges for:

- Electricity – charges related to the energy consumed;
- Delivery – The cost of delivering electricity from generators to transmitters and distributors;
- Regulatory – The cost of administering the wholesale electricity system and maintaining the reliability of the provincial grid; and,
- Debt Retirement Charge – Set by the Ministry of Finance to pay down the residual stranded debt of the former Ontario Hydro.

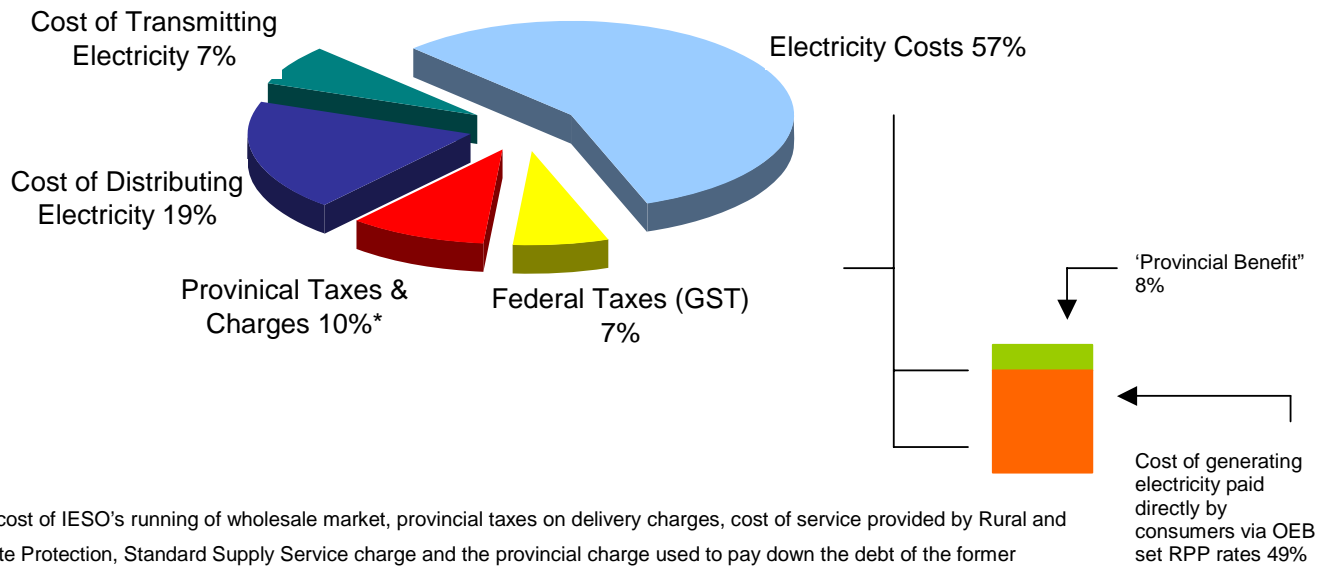
The charge for the electricity commodity, which is roughly half of a customer's bill, is a price set in the competitive market. In contrast, the charge for electricity distribution and transmission are regulated and approved by the OEB.

Electricity Cost Breakdown: Where Does Your Money Go?

Local distribution companies are only one link in the complex chain that brings electricity from the generation plant to homes and businesses. Local distribution charges account for about 20% of the average monthly residential electricity bill.

The local electricity distributor however, is responsible for collecting the other 80% that goes to government fees, taxes, generators, and transmitters.

AVERAGE COST BREAKDOWN OF A RPP CONSUMER WITH 1,000 KWH MONTHLY ENERGY CONSUMPTION



* Includes cost of IESO's running of wholesale market, provincial taxes on delivery charges, cost of service provided by Rural and Remote Rate Protection, Standard Supply Service charge and the provincial charge used to pay down the debt of the former Ontario Hydro (0.7c/kWh)

** Provincial Benefit – the difference between the market price of electricity and the set price paid to certain regulated and contracted generators

v. The Evolution of the Market

Time Line

| | | | | | | | | | |
|-------------------------|------------------|------------------------|--------------------------|-------------------|----------------------------------|----------------------------|--|-------------------------------|----|
| 1906 | 1996 | 1998 | May '02 | Nov '02 | Dec '03 | Dec '04 | Mar '06 | Dec '07 | ?? |
| Public monopoly created | Macdonald Report | Energy Competition Act | Competitive market opens | Bill 210/rate cap | Bill 4 Electricity Price Changes | Bill 100 Restructuring Act | Bill 21 Energy Conservation Responsibility Act | 800,000 Smart meters deployed | |

Vertical integration: Ontario Hydro

Prior to 1998, the provincial crown corporation Ontario Hydro was responsible for electricity generation, transmission and some distribution (to some large customers and rural areas). Municipal electric utilities, accountable to either a local Hydro-Electric Commission or a Public Utilities Commission, were responsible for the local distribution and selling of electricity.

Problems with Ontario Hydro's structure began to emerge, as investments in nuclear mega-projects created a ballooning and unsustainable debt. These projects were subject to massive and recurring cost overruns, and generating at Ontario Hydro a publicly-financed debt of \$38.1 billion by 1998. The debt, amounting to \$3000 for every person in Ontario, led to a 60% rise in electricity prices between 1985 and 1995.

Coincident with the escalating debt from nuclear generation projects were demands from many large customers for the ability to choose electricity suppliers. At the same time, low-cost, smaller-scale generation plants became commercially viable. As natural gas prices fell in the late 1980s, the clamour for competition became louder.

Macdonald Report

In 1995 the Ontario government established a committee, chaired by the former federal finance minister, the Honourable Donald S. Macdonald, to investigate and assess the options for phasing in competition in the province's electricity system. The Macdonald Committee made the following recommendations:

- Wholesale competition. Generators should compete against one another to supply electricity to distributors and large customers. This required the break-up of Ontario Hydro's generating assets, to create a level playing field.
- Retail competition. After a wholesale market is established and proven, a retail market should be opened that allows competition in the selling of electricity to all customers, including residential customers.

- System operator and electricity exchange. To facilitate the new market for electricity, an independent system operator should be created to coordinate the physical dispatch of all electricity in the province. As a corollary to the system operator, an electricity exchange should be established to coordinate the offers, bids and settlement procedures that form the backbone of a wholesale market.
- Accessible transmission. Ontario Hydro's transmission system should be transferred to a separate corporation, to facilitate non-discriminatory access by electricity suppliers.
- Restructured distribution. In 1996 there were over 300 separate electrical utilities, many of which were isolated municipal distribution networks surrounded by Ontario Hydro's distribution network (the 'doughnut effect'). To promote a more efficient distribution network it was suggested that there should be industry consolidation, to create 'should-to-shoulder' distribution service areas. (Today the number of electrical utilities has been reduced to less than 90.)

Energy Competition Act

Following a 1997 Government White Paper entitled "Direction for Change", in November 1998 the government passed the Electricity Act and the Ontario Energy Board Act: collectively known as Bill 35, the Energy Competition Act. Bill 35 implemented most of the Macdonald Committee's recommendations, establishing the framework for a competitive market by:

- Creating an independent, not-for-profit corporation called the Independent Market Operator (since renamed the Independent Electricity System Operator), which would also create the rules for the operation of the electricity market;
- Establishing that access to the province's transmission grid must be non-discriminatory;
- Dividing Ontario Hydro into two crown corporations – one owning generation assets (now called Ontario Power Generation), and another owning the transmission system and distribution assets (now called Hydro One);
- Transforming the remainder of Ontario Hydro into a financial corporation of the province (now called the Ontario Electricity Financial Corporation) to hold the debt that cannot be serviced and retired by the two new operating companies;
- Requiring the two new Ontario Hydro businesses and all municipal electric utilities to make payments-in-lieu of taxes to the provincial government;
- Requiring all municipal electric utilities which transfer property (i.e., consolidate with one another) to pay a transfer tax equal to a portion of the fair market value of the property transferred; and
- Requiring all municipalities to transfer the assets of their electric utilities to for-profit corporations (i.e., incorporated under the Ontario Business Corporations Act), eligible to earn commercial rates of return on capital, and whose shares would initially be owned entirely by the municipal corporations themselves.

The Ontario Energy Board Act gave the OEB the power to licence and regulate all market participants, and set transmission and distribution rates.

A New Role for Distributors: Paying Taxes and Earning a Rate of Return

In preparation for the opening of the competitive market, many distributors applied to the OEB for distribution rates that provided the rate of return expressly permitted by Bill 35 (and later set by the OEB at 9.88% per year). In turn, these distributors were required, for the first time, to make direct payments to the provincial government in lieu of taxes. This was the heart of the transformation of municipal electricity utilities into commercial entities.

In order to smooth the impact on consumers, the rate of return (9.88%) was to be implemented over three years (necessitating a three-year phase-in of proxy taxation as well). However, in response to (unrelated) price volatility in the wholesale market, all distribution rates were frozen in November 2002, after only two distribution rate and provincial tax adjustments..

Recognizing the deleterious effects of the rate freeze, a new government permitted distributors to apply for the third phase of the 9.88% rate of return, beginning in March 2005. As a condition for receiving the full rate of return, distributors have agreed to invest the first year of this increased revenue entirely in conservation programs.

Preparing for the Open Market: 1998-2002

Many of the most onerous preparations for open market operations fell to distributors. Distributors undertook the expensive process of creating systems to settle accounts with other market participants, redesigning billing systems, and implementing the OEB's costly market readiness program.

At the beginning of 2002, based on a recommendation by the Ontario Energy Board that distributors were ready to operate in a competitive market, the government set a market opening date of May 1, 2002.

Bill 58: Reining in Retailers

In June 2002 the government passed an amendment to the Electricity Act which, among other things, created an "Energy Consumers' Bill of Rights". This was done to rein in the questionable business practices of some electricity retailers. By enacting this legislation, the government acknowledged the serious problems created by some unscrupulous retail electricity marketers.

Unfortunately, the design of the electricity market in Ontario puts distributors in the position of subsidizing the operations, and carrying the financial risks of these same retailers on an ongoing basis.

Summer 2002: Hot Weather, Bad Timing and a Flawed Market Design

The summer following the market's opening was the hottest in 50 years. As a result, that summer saw electricity demand hit a record high of 25,414 MW. Simultaneously, Ontario's capacity to produce electricity was reduced during this period, due to a lack of rain for hydro power and unforeseen difficulties at coal and nuclear power plants. The result was the economist's classic case of high demand and limited supply pushing prices through the roof.

Unfortunately, the market was designed by Bill 35 to pass through wholesale spot market prices directly, through bills prepared by distributors, to Ontario's consumers. The exposure of ordinary residential consumers to widely fluctuating and skyrocketing spot prices was a fundamental flaw in the market's design.

With customers voicing their displeasure, the government made a political decision to cap electricity rates for customers, while preserving the wholesale market for generators and large buyers.

Bill 210

The government quickly implemented its November 2002 price-cap announcements through the introduction and passage of Bill 210, the *Electricity Pricing, Conservation and Supply Act*.

This legislation was a dramatic reversal of the direction of the government's electricity policy. One salient feature, however, was an expiry date, set for May 1, 2006. While Bill 210 was drafted as temporary legislation, it has already been superseded and modified by Bill 4 and Bill 100. Nevertheless, it has had, and will continue to have for years to come, a major impact on Ontario's electricity system, market participants and customers.

For distributors, Bill 210 exacerbated many of the serious problems that already existed in the Ontario market, and which put distributors in difficult financial straits. This difficulty was underscored by the collective debt rating downgrade that the industry received at the end of November 2002, immediately following the introduction of Bill 210 in the legislature.

Bill 4

The *Ontario Energy Board Amendment Act (Electricity Pricing)*, 2003 ensured that low volume and designated consumers pay electricity prices that reflect the true cost of electricity, as a means of furthering fiscal responsibility and encouraging conservation. Under this plan, the first 750 kilowatt-hours consumed by low-volume and designated consumers in any month was priced at 4.7 cents per kilowatt-hour and consumption above that level was priced at 5.5 cents per kilowatt-hour. This pricing plan was in place until April 1, 2005, when the OEB developed a new mechanism, the Regulated Price Plan (RPP), for setting prices. (See "Regulated Price Plan", above in the Glossary of Terms, and below in "The Market Today")

vi. The Market Today

In its report on Ontario's Supply Mix in 2006, the Ontario Power Authority estimated that there will be a gap in electricity supply of approximately 24,000 megawatts by 2025. This is equivalent to about 80% of the province's current capacity.

The Province has committed to advancing an energy policy that will ensure a vibrant, reliable and sustainable electricity industry for future generations. Building new and renewable generation is an important part of the solution, but it is not the only approach to addressing Ontario's energy challenges. Just as importantly, the government has looked to the province's electricity distributors to play a central role in the development and implementation of electricity conservation programming.

A discernible shift in energy policy by the government has had a marked influence on the changing landscape of the province's electricity industry – characterized by the movement away from a competitive market model to a 'hybrid' model aimed at balancing competition and regulation in the industry.

Change has been the operative word for Ontario's electricity distributors - whether this is reflected in their new responsibilities in the realm of conservation activities and smart meter implementation, or the part they are playing in the ongoing reform and evolution of Ontario's electricity sector.

Electricity distributors have become much more than the 'wires only' businesses they were just three short years ago.

Bill 100 Transforms Ontario's Electricity System

The government passed the *Electricity Restructuring Act, 2004* (Bill 100) on December 9, 2004. The legislation was transformational: it launched Ontario away from the pure spot-market experiment of 2002, which subjected consumers to such wildly fluctuating prices. It created two new institutions: one to build an electricity system more heavily based on long-term, stable supply contracts, and the other to kick-start serious conservation efforts. It also strengthened the role of the Ontario Energy Board as a guardian of independent, effective rule-making, and most importantly, of stable, predictable prices for consumers.

Bill 100 has three strategic objectives:

- To address the critical need for new supply over the long term;
- To increase conservation and the use of clean energy; and
- To maintain stable, predictable and competitive electricity prices for consumers across the province.

Key elements of the Act are:

- The creation of a new Ontario Power Authority (OPA), that ensures an adequate, long-term supply of electricity through contracting (as opposed to spot market) arrangements;
- Regulated (stable, predictable) prices for all customers in Ontario;

- A redefinition of the role played by the Independent Electricity Market Operator, renamed the Independent Electricity System Operator (IESO);
- The creation of a new Conservation Bureau, led by the province's first Chief Energy Conservation Officer, to coordinate and organize conservation initiatives; and
- Provisions that the Ministry of Energy will continue to set province-wide targets for conservation, renewable energy, and the overall mix of supply sources in the electricity sector.

The Ontario Power Authority

The OPA's main responsibilities are to:

1. Forecast electricity demand and the adequacy and reliability of electricity resources for the medium and long-term;
2. On the basis of these forecasts engage in activities that ensure adequate, reliable and secure electricity supply and resources; and
3. Promote diversification of electricity sources, in particular the use of cleaner energy sources and technologies.
4. Create a Conservation Bureau, and appoint a Chief Energy Conservation Officer, to develop, coordinate and stimulate commitment to electricity conservation and demand management programs.

The legislation confers upon the OPA specific powers to enter into contracts for electricity supply and capacity (an example of the latter is paying a large customer not to consume energy during a peak period). This is the mechanism by which the OPA will fulfil its obligation to ensure reliability and diversification.

Long-term electricity supply contracts provide the OPA with stable, predictable prices that can be passed on to consumers. These contracts also provide investors with the stability they require to build new generation plants in Ontario.

Similarly, the OPA can issue Requests for Proposals, which specifically target clean, renewable energy sources. In this way the OPA can ensure reliable electricity supply in Ontario, and also affect the type of supply that is developed.

A Strengthened Ontario Energy Board

The *Electricity Restructuring Act* empowers the OEB to review and revoke any amendment made by the IESO to the rules that govern the wholesale market. In essence, the OEB is now a powerful neutral arbiter over the market's operation. In addition, the OEB now has responsibility (formerly with the IESO) for market surveillance: searching for market abuses and structural market inefficiencies.

Regulated Price Plan (RPP)

The Regulated Price Plan (RPP) is designed to ensure that the prices consumers pay better reflect the prices paid to electricity generators, but without the volatility that exists in wholesale electricity market prices. The plan represents a stable and predictable approach to electricity pricing. Also, because of its tiered aspect (prices increasing past a certain level of consumption), it encourages conservation.

The Plan applies to low volume consumers who do not choose an electricity retailer. “Low volume” consumers include all residences, and small businesses that consume less than 250,000 kWh a year.

The price threshold changes twice each year. The threshold is 1000 kWh per month during the winter season (November 1 to April 30) and 600 kWh per month during the summer season (May 1 to October 31). Current prices for the RPP (set by the OEB on May 1, 2007) are 5.3 cents per kilowatt hour up to the threshold, and 6.2 cents per kilowatt hour for electricity consumed above that threshold.

For non-residential RPP consumers, the price threshold remains at 750 kWh per month throughout the year

The Plan came into effect April 1st, 2005, and is updated each year by the OEB.

Meter Technology to Help Consumers Track their Electricity Usage

‘Smart meters’ provide the technology that allows consumers to not only track how much electricity they use at different times of the day, but the cost implications of using electricity during on-peak, mid-peak, and off-peak hours. Armed with this information electricity consumers will be able to better regulate their usage when prices are highest during on-peak hours and take advantage of low rates in off-peak hours.

On-peak: This time period represents when demand for electricity is highest. On-peak can represent a number of time ranges during the day, depending on the season. Pricing rates will be adjusted and change according to the summer and winter seasons.

Mid-peak: This time period represents when demand for electricity is moderate. Mid-peak represents two time ranges during the day, depending on the season. Pricing rates will be adjusted and change during summer and winter seasons.

Off-peak: This time period represents when demand for electricity is lowest. All weekends and holidays will be priced using the off-peak rate. On weekdays in the summer and winter, off-peak periods will occur overnight from 10:00 pm until 7:00 am.

Ontario Government Pricing Plan (Set by Ontario Energy Board) for Smart Meters – May 1, 2007

| Day | Time | Time-of-Use | Price in cents/kWh |
|--|---------------------|-------------|--------------------|
| Weekends & Holidays | All day | Off-peak | 3.2 |
| <u>Summer Weekdays May 1 to Oct 31</u> | 7:00 am to 11:00 am | Mid-peak | 7.2 |
| | 11:00 am to 5:00 pm | On-peak | 9.2 |
| | 5:00 pm to 10:00 pm | Mid-peak | 7.2 |
| | 10 pm to 7:00 am | Off-peak | 3.2 |
| <u>Winter Weekdays Nov 1 to Apr 30</u> | 7:00 am to 11:00 am | On-peak | 9.2 |
| | 11:00 am to 5:00 pm | Mid-peak | 7.2 |
| | 5:00 pm to 8:00 pm | On-peak | 9.2 |
| | 8:00 pm to 10:00 pm | Mid-peak | 7.2 |
| | 10:00 pm to 7:00 am | Off-peak | 3.2 |

The staggered installation of smart meters in the residences of Ontario's electricity consumers over the next four years, will mean that different power rates will be charged customers depending on the type of meter in use.

For those customers with smart meters, the above pricing mechanism (although not yet mandatory for those consumers already equipped with a smart meter, some consumers are already paying the time-of-use prices) will become mandatory beginning at a date to be announced in 2007. The pricing mechanism will be unchanged in the first year, but will be subsequently reviewed and potentially adjusted on a six-month basis after that time.

Revised Responsibilities of the Independent Electricity System Operator

Renamed the Independent Electricity System Operator (IESO) in Bill 100, the IESO passed its quasi-judicial functions to the OEB. Today, the IESO manages Ontario's electricity system and operates the wholesale electricity market. It forecasts the demand for electricity and ensures that there are available supplies to meet that demand.

The IESO also has an important role to play in helping the OEB determine the Regulated Price Plan. To the extent there is any difference between the regulated price and the actual cost of electricity in the IESO's wholesale market, the difference is tracked in variance accounts.

The Role of the OPA's Conservation Bureau

In moving forward, conservation will play an increasingly important role in assuring an adequate supply of electricity for the Ontario public, businesses and institutions. Bill 100 places a greater emphasis on conservation and clean energy than prior electricity legislation and underscores the government's efforts to make significant headway on these two issues.

As required by legislation, the OPA has established a Conservation Bureau to provide leadership in the planning and co-ordination of measures for electricity conservation and load management in Ontario. The mandate of the Conservation Bureau is to coordinate and stimulate commitment to electricity conservation and demand management programs.

Bill 100 established these requirements of the Conservation Bureau:

- Develop province-wide conservation programs that are best delivered on a provincial basis and/or develop fundamental program elements that can be tailored for local delivery
- Lead the educating and informing of consumers on the benefits and techniques for conservation
- Assess the technical, economic and market potential for conservation in Ontario, which can serve as the basis for informing targets, priorities and program design at the provincial, sectoral and local levels
- Develop the methodology for assessing the cost and benefits of conservation measures and maintain a catalogue of conservation measures, their average costs and benefits for use by local distribution companies and others
- Develop the system for monitoring and evaluating conservation impacts
- Report on Ontario's progress in achieving its conservation targets and what further action is required.

The Conservation Bureau focuses on leadership and awareness of conservation, promoting legal and policy opportunities to reduce barriers to conservation, and reporting.

Distributors are Making Conservation Happen - \$163 Million in LDC CDM Activities Approved by Ontario Energy Board

Coincident with the introduction of Bill 100, Ontario's local distribution companies are once again permitted to apply for funding to implement conservation and demand management programs. This was a right that was originally taken away with the creation of the competitive electricity market in 1998, with predictable consequences for the level of conservation in the province.

The Ontario Energy Board (OEB) approved over \$163 million in Conservation and Demand Management (CDM) activities submitted by over 80 of Ontario's electricity distributors in early 2005. The plans lay out a 3-year schedule for delivery of CDM activities and span a number of activities – from consumer education and energy efficient appliance rebate programs, to traffic light retrofits, CFL bulb promotions and load management programs. Additionally, electricity distributors are also looking to their own operations and implementing processes to improve system optimization and loss reduction.

Ontario's LDCs' are bringing experience and expertise to the table and are offering innovative programming. This is a first, and important step in creating a culture of conservation amongst consumers in the province.

As the primary billing agent for the electricity industry, distributors deal directly with the province's residential and business consumers. In communities across Ontario, LDCs are trusted with the responsibility of delivering energy, reliable service, and infrastructure maintenance. This close relationship provides LDCs with a unique understanding of the local needs of their customers and service territory. By understanding these needs, electricity distributors are successfully providing conservation programs that are well suited to the needs of their local communities and customer base.

Annual 2006 CDM Reports Demonstrate Important Role being Played by Electricity Distributors in Conservation

For the past two years, electricity distributors have submitted CDM Annual Reports to the Ontario Energy Board. The results cited in the reports demonstrate the momentum LDCs have gained in the first and second years of third tranche spending. Some LDCs have already spent their approved funds and will apply for further funding in their 2007 distribution rate applications.

Some aggregate highlights from the LDC CDM annual reports, include:

- Approximately \$73 million was invested by electricity distributors in CDM programming in 2006 (through 2005 and 2006, approximately \$108 million has been invested).
- Approximately 500 million kilowatt hours were saved as a result of LDC conservation activities in 2006 (through 2005 and 2006 close to 655 million kilowatt hours have been saved).
- Approximately 66 percent of third tranche funds were spent through 2005 and 2006.
- More than 500 CDM programs will be delivered by 2007.

Government Raises the Bar on Conservation Targets in 2006

In June 2006, the government responded to the Ontario Power Authority's Electricity Supply Mix Plan and directed the OPA to proceed with some revisions to the plan. Most notably, the government has set more aggressive targets for conservation, which calls for the doubling of conservation targets to 6,300 MW by 2025 from 3,150 MW as recommended in the OPA report.

The setting of these new targets, was followed by a further government announcement to provide additional conservation funding to local distributors. The OPA was directed by the Minister to create a 3-year \$400 million fund to support LDCs in the delivery of conservation and demand management across the province.

In the Spring of 2007, electricity distributors began to contract with the OPA to support and/or deliver four CDM programs province-wide.

Bill 21 and the Implementation of the Government's Smart Meter Initiative

The *Energy Conservation Responsibility Act, 2005*, is a part of the broader government commitment to create a 'culture of conservation' that is designed to address peak demand issues and the ongoing strain on the electricity supply in the province.

Bill 21 legislation provides the framework for the installation of 800,000 smart meters in homes and businesses by 2007, and in every home and business by 2010.

The bill has been described as 'enabling' legislation as it gives the government the flexibility to determine the best options for the governance, ownership and regulatory structures of Ontario's smart metering initiative in moving forward.

The distribution sector, with its expertise and experience in metering, has assumed a central role in laying the groundwork for smart meter implementation. The province's electricity distributors are the industry players who will be responsible for purchasing, owning, and installing smart meters. Local distributors will also continue in their role as billing agents and will carry on their responsibilities as the operators and maintainers of the meters.

The legislation began the process of scoping out activities of the various parties necessarily involved in the delivery of the initiative, including electricity distributors.

Legislation also created a new Smart Meter Entity (SME), authorized to manage and aggregate data related to consumers' electricity consumption. The role of this entity remains a critical component of the smart meter system design and will ultimately determine how various pieces of the system will integrate.

Smart Meter Infrastructure (SMI)

In July 2006, the Ministry of Energy entered into an arrangement with the Independent Electricity System Operator (IESO) whereby the IESO will provide support to the government's Smart Meter Initiative (SMI) by coordinating and project managing implementation activities. The IESO's Smart Metering System Implementation Program (SMSIP) specifically pertains to the delivery of the meter data management / meter data repository (MDM/R) functionality, including all interfaces between the MDM/R and local distribution companies' smart metering and customer information systems.

As of the summer of 2007, operational and regulatory details of how the meters will be installed and managed continue to be formulated and refined.

In order to meet the government's timelines and facilitate the smooth implementation of the initiative, local distributors will need to rely on the ability of both the provincial government and industry regulators to provide the framework and regulatory tools required to fulfill this commitment.

Meeting Government Targets - Deploying 800,000 Smart Meters by the End of 2007

The province's six largest utilities and Hydro One are moving forward with meter procurement in order to help achieve the government's initial target of installing 800,000 meters by the end of 2007. Additionally, there are a few distributors who have been given approval by Ontario's regulator to proceed with meter deployment. In selected cases, certain distributors have been given approval to expand their pilot projects in their service territories.

The government has three key objectives: meet the target of 800,000 meters installed by the end of 2007; ensure that there is an orderly and smooth deployment of smart meters; and, ensure that a competitive procurement process results in the lowest possible cost to ratepayers.

Meter technology must meet minimum specifications that have been set out in government regulation. More particularly, the criteria and requirements for the meters, metering equipments, systems and technology have been laid out as part of the functional specifications for the Advanced Metering Infrastructure (AMI).

Those electricity distributors designated to install this first phase of the government's targets, are currently deploying smart meters in communities across the province and are well on their way to achieving this goal by year's end.

As new meter technologies come into the marketplace, distributors are continuing to conduct pilots to test emerging technologies. Smart meter pilots conducted over the past two years have provided invaluable data and information to distributors from across the province and have been instrumental in the development of functional specifications, consumer education programs, and providing insight into system interfacing.

Approximately 3.5 million smart meters will be installed over the coming three years to meet government targets for full implementation by 2010.

Rationalization of Ontario's LDC Sector

Until a few years ago, Ontario had over 300 electricity utilities. After a wave of consolidation between 1999 and 2000, and a further handful of mergers since that time, the province now has fewer than 90 electricity distributors.

LDCs were established as *Ontario Business Corporation Act* (OBCA) companies and were legislated in 1998 to operate as for-profit, business corporations. In the fall of 2006, the provincial government announced a 2-year Transfer Tax Exemption on the sale of publicly owned electricity assets to other Ontario-based, publicly owned distributors (the third of its kind over the past eight years).

In light of the current industry landscape, each LDC faces a strategic choice of whether to merge with another distributor, acquire another distribution company, sell the LDC outright, or continue to chart its own course.

In the coming months, some municipally-owned distribution companies could undergo discussions that will take a closer look at the options and weigh the pros and cons in determining their courses in moving forward.

The transfer tax holiday expires in the fall of 2008. This matter is sure to be an issue of interest into the foreseeable future for numerous distributors across the province.

The Ontario Energy Board's Multi-year Distribution Rate Setting Plan 2007 – 2010

In early 2006, the Ontario Energy Board (OEB) announced its intention to establish a multi-year electricity distribution rate-setting plan for the years 2007 to 2010.

The OEB has recognized the need to reduce simultaneous annual rate setting for all distribution utilities and the idea that allowing rates to be set for multi-year periods will increase regulatory efficiency.

Among other things, the plan will help lay the foundation for what is being called a 3rd Generation Incentive Mechanism. The plan also provides for greater regulatory certainty for electricity utilities, and is meant to help drive efficiency improvements in the province's distribution sector.

Incentive Regulatory Mechanisms or incentive based regulation (also commonly known as Performance Based Regulation, or PBR) is a regulatory methodology to encourage utility management to be efficient in the running of their business.

The PBR methodology puts a cap on the utility's revenues or prices, in order to persuade management to produce and deliver electricity cost-effectively and in many instances incentives are tied to service quality improvement. The two common forms of PBR are price caps or revenue caps.

The OEB's four-year exercise, and the subsequent changes that will occur in setting distribution rates in the future, will have an enormous impact on the electricity distribution sector and how it does business in moving forward. It will be an evolutionary process – an approach that refines the mechanisms as they are developed and implemented.

A staggered approach to re-base distributor's revenue requirements is being adopted, which will see approximately a third of distributors re-based in each of 2008, 2009 and 2010. Re-basing is essentially a comprehensive review of all utility costs.

Realising that the transition to a performance-based regime will be a complex process, and that a number of rate-related studies need to be undertaken, the OEB is adopting a transitory methodology called the 2nd generation Incentive Regulatory Mechanism (IRM). 2nd generation IRM is a transitory methodology and not an end-state in itself. Consequently, the OEB has developed a multi-year rate-setting plan, which, according to the Board, is aimed at:

- Providing greater regulatory certainty to distributors during the transitory period 2007 to 2010 when several rate-related studies are carried out;
- To begin to drive efficiencies in the distribution sector; and,
- To lay a foundation for a 3rd Generation Incentive Regulatory Mechanism.

The OEB's Business Plan for 2006 – 2009 outlines the progression of fundamental long-term regulatory initiatives and ongoing core adjudicative work that is central to the effective operation of the energy sector. One of the key Strategic Business Objectives outlined in the Business Plan addresses the need for providing "sound economic regulation that balances the interests of consumers with the need for a financially viable energy sector." Among other measures, it includes a commitment to put in place a multi-year incentive rate plan beginning with the 2007 rate year.

The Electricity Distributors Association (EDA) is the voice of Ontario's local electricity distributors, the publicly and privately owned companies that safely and reliably deliver electricity to over four million Ontario homes, businesses and public institutions. The EDA provides members with advocacy and representation in the legislative and regulatory environment and the electricity market in Ontario.

To obtain information on issues confronting Ontario's
Electricity Distribution sector, please contact:

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For more information about the Electricity Distributors Association, go to www.eda-on.ca.



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