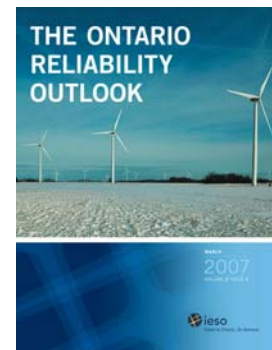
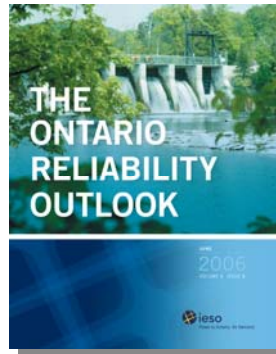


Understanding Ontario's Electricity Market – Is your municipality ready for 2008?

Derek Cowbourne, Chief Operating Officer



- More and more businesses and public sector organizations across Ontario are taking positive steps to manage their electricity consumption and costs.
- They are recognizing that electricity costs aren't just overhead costs or pass-through costs, but are controllable costs that have an impact on their bottom line.
- After April 2008, Ontario municipalities will no longer be eligible for the Regulated Price Plan.
- What I hope to do today is help you prepare for this important change by highlighting some relevant aspects of how the electricity market works, and some steps you can take to manage your electricity costs.



- The IESO is responsible for managing and balancing the real-time supply and demand for electricity in Ontario. We direct generators and the companies that deliver electricity to you to ensure that the overall system functions in a stable and reliable manner. We look at future supply conditions and issue public reports saying what we see.
- The third ORO was issued on March 2. Prompted in part by the first two issues, the outlook for Ontario has improved:
- More than 1,000 MW additional generating capacity scheduled to come on-line within next 18 months
- Two new gas-fired generating facilities will help maintain reliability in and around Greater Toronto Area
- Approximately 400 MW of wind generation now in service with another 200 MW scheduled to come on-line
- Ontario will continue to import power from neighbouring jurisdictions. Most of the imports are economic (i.e. cost less than generating the power in Ontario) but some will be for reliability, e.g. under extreme weather conditions or because of equipment failures

- Proposed 10 per cent reduction to its fees for 2007; follows five per cent reduction in 2006
- Providing a \$12 million rebate to Ontario consumers
- IESO Board approved disbursement of \$57 million surplus funds that have accumulated in Transmission Rights Clearing Account; to be disbursed over 12 months to all wholesale customers and exporters

Of note: The disbursement of these surplus funds was approved as a transition measure designed to coincide with another market rule amendment related to the 3x ramp rate multiplier. Given that the OEB has recently issued an order staying the implementation of this rule amendment, the disbursement is on hold as well.

- IESO appointed as acting Smart Meter Entity responsible for establishing Meter Data Management/ Repository function
- Will act as coordinator of all activities required to enable the smart metering system to function
- 800,000 smart meters installed by 2007; throughout the province by 2010

- The implementation of the provincial Smart Meter program will improve the ability of customers to better manage their electricity costs, as well as enhance the reliability of the system in peak periods.
- Over the next few months, the IESO will be rolling out educational initiatives in different areas of the province to support this program.
- All municipalities will be required to have Smart Meters or interval meters by 2010.

Components of your Electricity Bill

Commodity		Today, the cost of the actual electricity portion of your bill is fixed under the Regulated Price Plan.
Today: Fixed	2008: Variable	
Transmission and Distribution Varies by utility		The cost of delivering electricity from the generating stations to you.
Regulatory Charge Fixed at 0.62 cents per kWh		The cost of services required to operate Ontario's electricity system.
Debt Retirement Charge Fixed at 0.7 cents per kWh		Set by the Ministry of Finance to pay down Ontario Hydro stranded debt.

- Your electricity bill is made up of a number of separate charges
- The first is the cost of the actual commodity. As it stands today, for municipalities, this is simply the fixed price times the amount of electricity you consume (in the month).
- The next item on your bill is the charge for transmitting and distributing power to your facilities. This includes the cost to transmit power along the high voltage transmission lines and along your own local utility's distribution system. This charge varies by local utility and is approved by the Ontario Energy Board.
- The bill also contains a regulatory charge. This charge covers the various costs for services required to operate the provincial electricity system, such as generation or responsive customer load paid to guard against real-time failures and other events.
- Finally, the last charge on your bill is the debt retirement charge, which has been set by the Ministry of Finance to pay down the stranded debt of the old Ontario Hydro

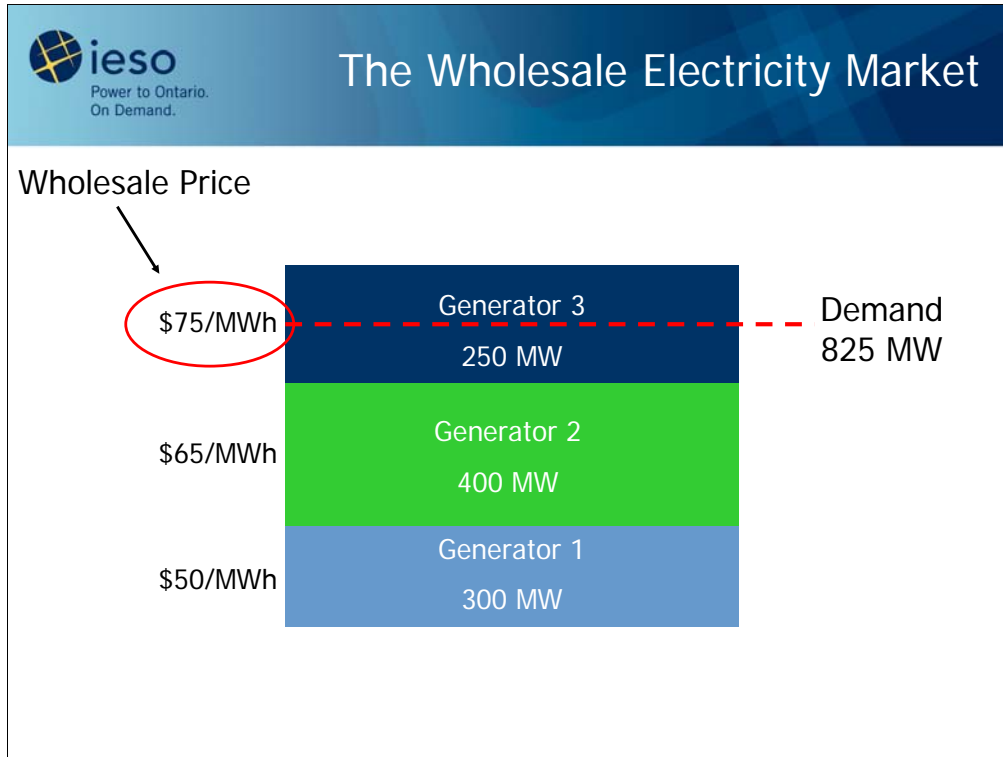
TODAY: Fixed Rates under Regulated Price Plan (summer rates listed)

- 5.8¢ per kilowatt-hour for first 750 kWh/month
- 6.7¢ per kWh thereafter

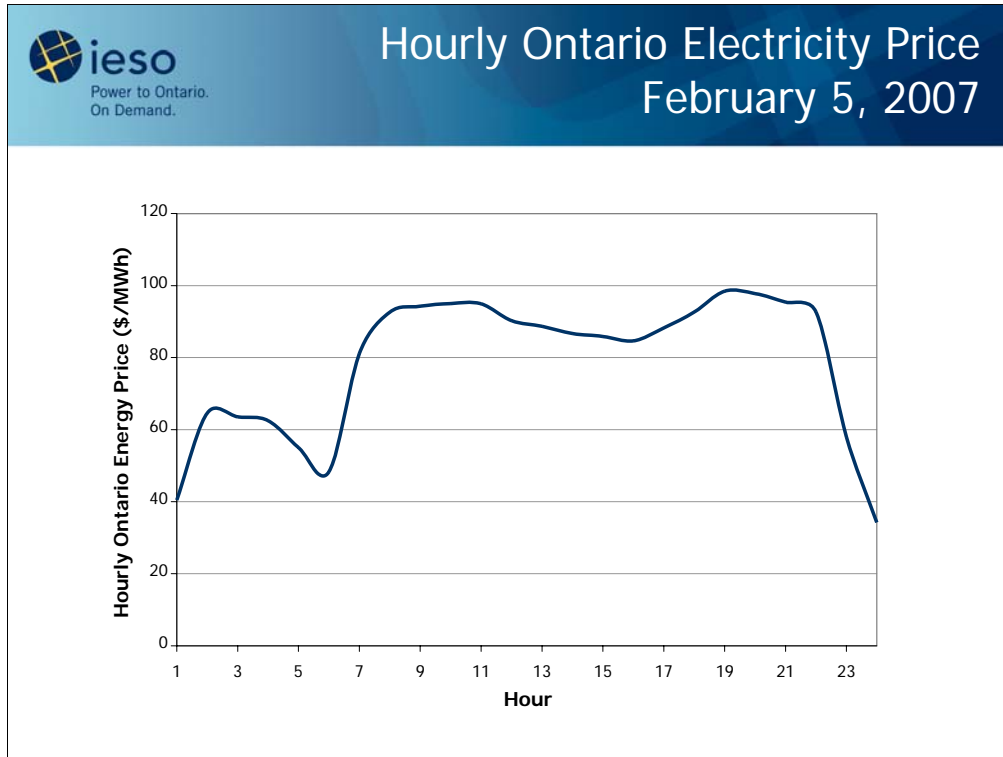
After April 2008: Variable Market Price

- Municipalities over 50 kW no longer eligible for RPP
- Will pay wholesale market price plus/minus rebates and adjustments

- As I mentioned, currently, the commodity price for municipalities is set by the government's regulated price plan and it is fixed.
- After April 2008, this will no longer be the case.
- In 2008, municipalities with an average monthly peak demand greater than or equal to 50 kW will pay the variable market price (ASIDE: these customers are in what the OEB refers to as the **General Service >50 kW** subclass)
- The variable market price is different every hour of the day.
- The remainder of this presentation will focus on what to expect in 2008 when you become exposed to variable prices and how best to manage your costs in this environment

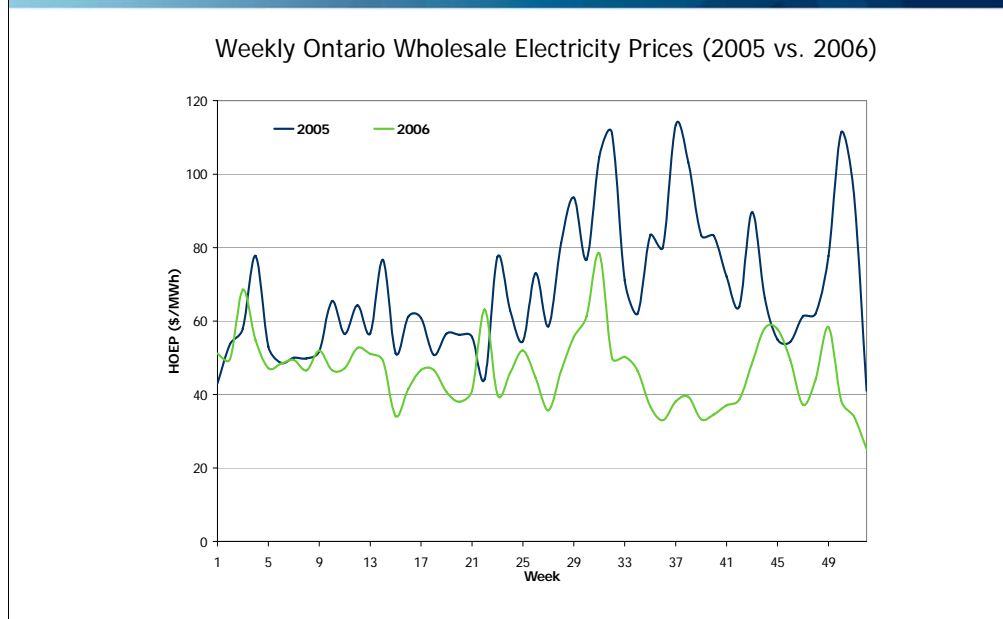


- So what do I mean by the variable market price?
- The IESO operates a wholesale electricity market.
 - Generators of electricity send “offers” to supply electricity into the market. Offers indicate how much electricity the generator can supply and at what price.
 - The IESO forecasts how much electricity is going to be needed in the province and stacks up these offers, starting from the lowest cost, until enough have been selected to satisfy the need
 - The wholesale price is the offer price of the last offer in the stack
 - Because the wholesale price is a function of demand and supply, it varies from hour to hour, as you will see on the next slide



- As you can see the wholesale price for electricity varies by hour depending on system conditions
- There is a substantial difference between average daytime prices and average night time prices.
- For most of the year, electricity prices tend to be higher in the afternoon when demand peaks as people return from home, particularly between 4:00 pm and 6:00 pm. Prices are usually the lowest on weekends and overnight, between 11:00 pm and 7:00 am.
- Prices also tend to be highest on Mondays and lowest on weekends.

Prices Also Vary During the Year



- The price of electricity also varies over the course of the year
- It tends to be higher in the winter and summer than in the spring and fall.
- This is because weather has such a large impact on demand: air conditioning in the summer, lighting and heating in the winter.
- As shown in this graph, prices were generally higher in 2005 compared to 2006. This is because there was more supply available in 2006 as well as lower demand overall. As I said previously, price is a function of supply and demand – it varies as balance between supply and demand changes.
- In fact the average market price in 2006 was only \$49/MWh compared to \$72/MWh in 2005. Price in 2006 were the lowest since the wholesale electricity market opened in 2002.

What Does All This Mean for you After April 2008?

- After April 2008, municipalities will pay the wholesale market price **plus or minus** rebates and other adjustments
- The Provincial Benefit and OPG Rebate vary by month
- The Provincial Benefit may be a negative or positive number

(¢/kWh)	February 2007	2006
Average Hourly Price	6.08	4.87
Provincial Benefit	0.70	0.30
Estimated OPG Rebate	-0.50	-0.11
Your Bottom Line	6.28	5.06

- The variable market price that you will be paying is essentially the wholesale electricity price as it is set every hour in the marketplace, plus or minus any rebates or adjustments that are calculated for each month - your Bottom Line will be different than the wholesale market price
- The Provincial Rebate accounts for the difference between the market price and the rates that are paid to regulated and OPA contracted generators.
- For example, if a generator that has a contract with the OPA earns more on the market than it should under its contract, the generator would provide a rebate to customers. In this case, the Provincial Benefit would be negative, or in other words, it would act as a discount off the market price. In some months, especially when market prices are lower, these generators that are under contract may not earn their assured revenues on the market, in which case customers would pay a positive Provincial Benefit.
- The OPG Rebate is similar, but it only considers the nuclear and large hydroelectric generating facilities that are owned by Ontario Power Generation
- Looking at the numbers for February of this year, it is important to remember that just as one swallow does not a summer make, one peak month does not mean that prices will be at that high level all the time: there are lower priced months as well. You have to take a longer term view, but do be aware of your consumption at peak times.

- There are three ways municipalities can pay for power starting in 2008:
 1. Hourly market prices (with interval meters)
 2. Weighted average of the hourly market price (without interval meters)
 3. A fixed rate through a retailer or through a bulk electricity purchasing program

BE AN INFORMED BUYER!

- With changing hourly prices, there are opportunities for municipalities to control their electricity costs.
- The first step is understanding your three options for paying for electricity starting in 2008.
- You can choose to install interval meters and pay the hourly market price. Interval meters are the only way to take advantage of the fluctuations in price because they track how much electricity you use in each hour of the day and you then pay the hourly price for that electricity.
- You can choose not to install interval meters yet, in which case you will pay a weighted average of the hourly price. This is based on consumption patterns of consumers in your area, rather than just your own.
- Of course, as of 2010, you WILL have an interval or smart meter
- Your third option is to sign a retail contract through a licensed retailer or purchase electricity through a bulk program. Contracts or bulk programs may not necessarily save you money, but they can provide you with certainty about the electricity portion of your bill – regardless of how prices fluctuate.
- The bottom line is that it is important to educate yourselves about your options so you can be a knowledgeable buyer and make an informed decision.

Controlling Your Electricity Costs



With the next few slides I hope to show how you can make any one of these options work for you.

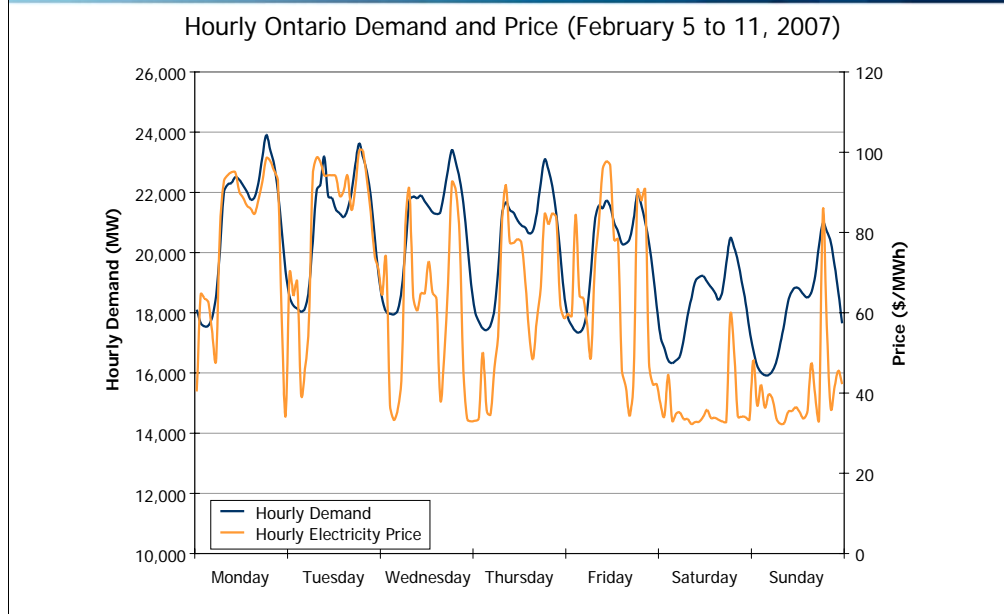
- The Region of Peel has shaved more than \$8 million or 18% of its energy budget.
- Interval meters provide information about when, where and how much electricity is being consumed.



"Interval meters have become a critical tool in our conservation initiatives," -- Steve Hall, Director of Corporate Energy Region of Peel

- Since the Region of Peel started tracking and acting on its hourly electricity consumption patterns and market prices, it has saved more than \$8 million in just two years

Electricity Usage and Prices Dip at Night and on Weekends



- Because prices tend to vary during the day, customers with interval meters shift their electricity consumption to lower priced periods whenever they can
- As a result they pay lower prices for the electricity they use
- In some cases, running operations at off-peak periods can cut electricity bills by more than 30%

- A demand profile can lead to cost-savings opportunities by helping you understand how much energy you use and when, and how fast you draw it from the system:
 - You can determine whether there are ways to avoid using electricity at the most expensive times of the day.
 - Knowing when your “peak demand” occurs each month allows you to make adjustments to lower your demand charges.

Consider hiring a professional energy auditor.

- One of the first steps you can take is to better understand where you stand today.
- How much energy do you use and when do you use it
- Before you invest in energy savings initiatives or make changes to your operations, work with your local utility or an energy auditor to get your demand profile, which will show the characteristics of your electricity use over time.
- A demand profile will allow you to see what times of day you are using the most electricity, and when your peak demand occurs each month.
- Then you may be able to avoid using electricity at the most expensive times of day or to lower your fixed demand charges



Doug Dittburner, Chief Engineer,
Unilever Canada

- Unilever is saving \$4 million every year through energy conservation.
- Their energy savings initiatives cost \$2.7 million.

- If it isn't possible for you to change when you consume electricity, consider adopting measures that allow you to use electricity more efficiently
- Making changes to use electricity do not have to be costly – in fact they may cost you nothing at all. Regular equipment maintenance or turning off equipment when not in use can reduce your electricity bill by up to 5%.
- An energy auditor can help you identify what changes you can make to your existing operations or what energy efficient technologies you can invest in.

- While fixed price contracts may not save you money, they provide you with cost certainty
- Not all contracts are created equally so pay close to all the terms and conditions of the contract
- You can also purchase electricity from a “green” retailer
- Visit www.ieso.ca/retailers for more information

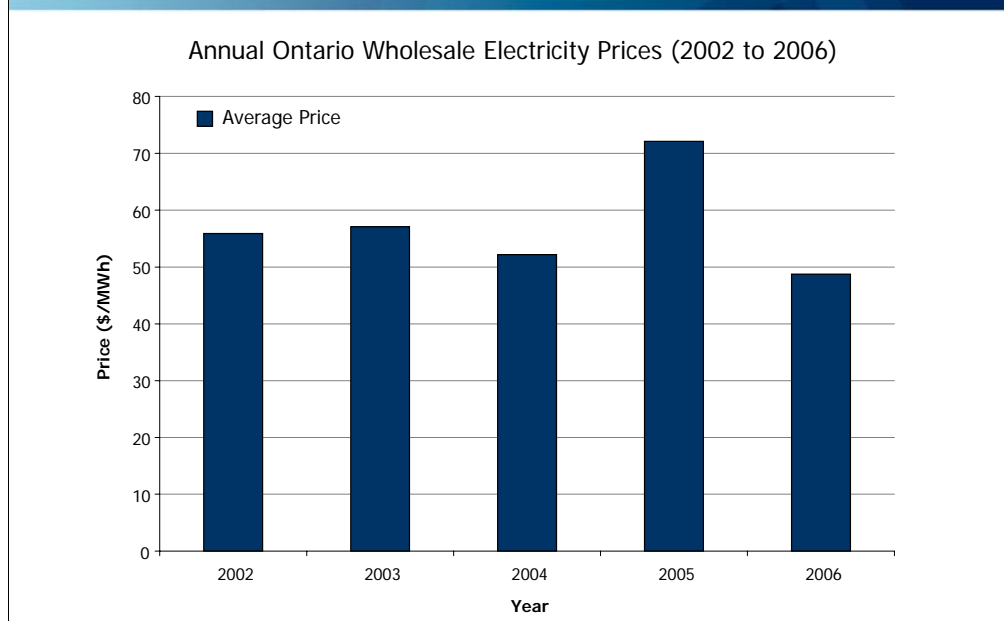
- As a large volume customer it may make sense for you to purchase electricity at a fixed rate through a licensed retailer
- Some contracts offer a fixed price over a period of time, while others that are suited to customers with interval meters, provide a fixed price for a block of hours each day
- Because electricity prices fluctuate and cannot be predicted in advance, it is difficult to tell if a fixed price contract will save you money in the long term.
- However, these types of contracts do provide price certainty and stability for a period of time.
- Pay close attention to the terms and conditions of any contract you consider signing, as they are all different.
- The state of the environment is getting a lot of attention these days and you may want to reflect that in your energy planning. Obviously, using less electricity is one way, but there are retailers offering contracts exclusively from renewable energy sources. You could choose to buy all your electricity from such a retailer, or you could buy “green” energy for just a few of your facilities or to power some of your events, like some municipalities already do.

1. Understand your Energy Costs
2. Monitor and Target
3. Understand When Energy is Used
4. Understand Where Energy is Used
5. Eliminate Waste
6. Maximize Efficiency
7. Optimize your Energy Supply
8. Monitor your Progress, Share the Results

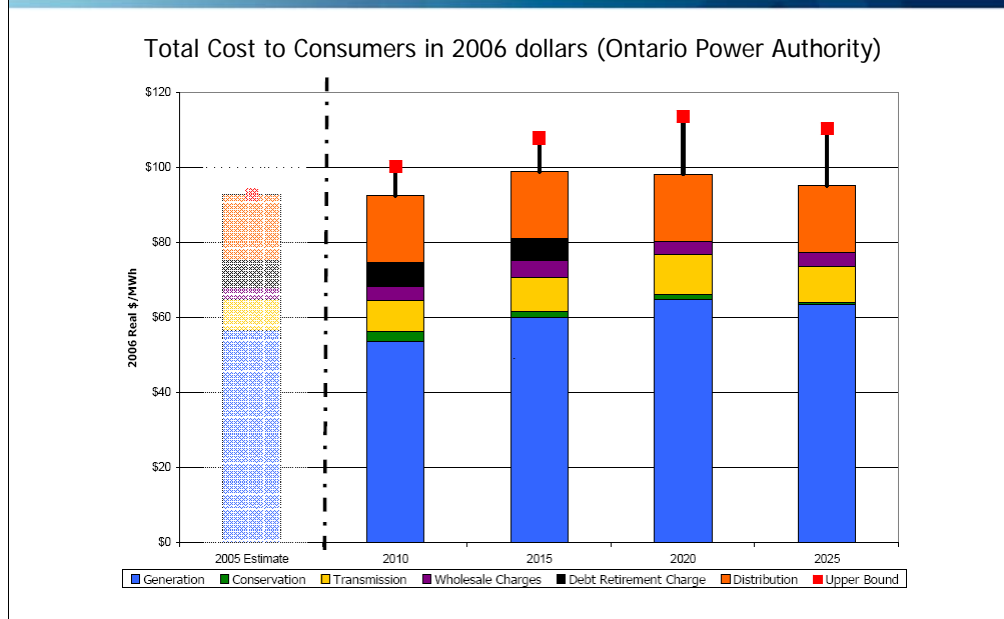
- Developing an official energy plan should be a key part of your strategic business plan.
- These steps provide a simple and systematic approach to understanding how you use electricity, what influences costs, how you can use less and how to chart your success.

- IESO's Emergency Load Reduction Program
- Ontario Power Authority's Demand Response Program for business
- Energy audit incentives and other assistance from Natural Resources Canada
- Conservation and demand management programs for business offered by some local distribution companies
- Incentive programs from gas utilities

- The Emergency Load Reduction Program (ELRP) is an IESO initiative that creates incentives for electricity consumers to help address the reliability needs of the province.
- This program involves voluntary reductions in energy use during critical peak periods to avoid actions such as emergency energy purchases and voltage reductions, while receiving payments from the IESO for participating.
 - *Stand-by payment is \$15/MW per hour*
 - *Load reduction payment*
 - *Max (HOEP, \$400/MW per hour) for two hours of reduction*
 - *Max (HOEP, \$500/MW per hour) for three hours of reduction*
 - *Max (HOEP, \$600/MW per hour) for four hours of reduction*
- The OPA's demand response program is a program that allows participants to receive compensation for curtailing their electricity demand.
- NRCan offers funding to defray the cost of hiring a professional energy auditor to conduct an on-site audit at an industrial facility.

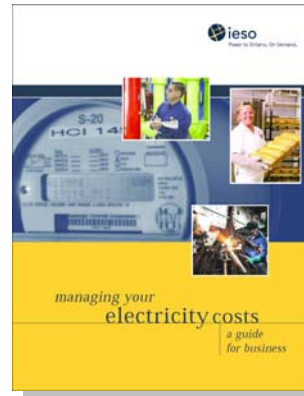


- The theme of my presentation as advertised by the conference organizers includes the question “Where are energy prices headed?”
- So let’s first look at where they have been...



- There are many factors that can influence future prices, and I can only leave it to you to pick the scenario you think most likely.
- But, while a competitive market might give us prices that are less than they would be without the market, with fuel and other raw materials continuing to increase in price, taking the long view suggests that electricity prices can only go up in absolute terms.
- However, in real terms, the cost of electricity today is the same as it was 15 years ago in 1992.

- Visit the IESO's website at www.ieso.ca/business for more information on how to lower your energy costs
- Access one of many publications to learn more about how to get started



- In the past the IESO has worked in partnership with municipal organizations, like the Region of Peel, to provide valuable information electricity issues.
- Discussions are underway with the Association of Municipalities of Ontario to grow our partnership to develop materials and workshops to help you prepare for 2008.
- Look forward to educational brochure targeted directly at municipalities and other presentations scheduled for later this spring.
- For more information on how to lower your energy costs, please visit our website.
- Thanks.