

**Notes for Remarks By**

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**To**

**the Ontario Association of  
Committees of Adjustment**

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**CHECK AGAINST DELIVERY**

Thank you for that very kind introduction.

I am very pleased to be here today to talk to you about Ontario's electricity system. It's an exciting time right now in our industry.

Renewable power, increasingly sophisticated energy conservation programs and smart meters are changing the way we think about and use electricity. They're also creating opportunities for Ontarians to take control of their electricity use in a way that wouldn't have been possible even five years ago.

Increasingly, the future of Ontario's electricity sector is being played out at the local level. And that's something that would interest you as municipal officials because it may have an impact on your duties in the years to come.

We're used to thinking of our power system as a collection of big generating stations and high-voltage transmission lines transporting electricity over great distances. We'll need to start redrawing that picture in the next few years.

The need to meet Ontario's climate change targets and reduce our sector's carbon footprint has put a premium on generating electricity using cleaner and greener renewable sources – wind, water, solar power and biomass.

And unlike big coal or nuclear generating stations, your average renewable generator doesn't always need large amounts of land or wads of capital to get going.

So you're seeing more and more wind farms in the countryside, solar rooftops harnessing the power of the sun, farmers burning biomass and landowners generating small-scale hydraulic. These are customers who, in many cases, are taking care of their own needs and selling excess electricity back to the grid.

So now it's increasingly possible for individuals to be both customers and generators – I told you things were changing.

This is the evolution of our power system at the local level – more and more participation by communities, local governments, local utilities and small-scale generators located right in the community.

This is a trend that is going to become even more important as Ontario's landmark Green Energy Act is implemented. So, it's definitely not business as usual.

But before going much further, I think it's worth going back a few years to talk about how some of these forces driving change today got their start.

I want to trace for you some of the developments that led to the creation of the Ontario Power Authority and Ontario's first long-term energy plan in a decade – the Integrated Power System Plan – or IPSP, as we call it.

I will then update you on the current state of the plan.

Then I want to talk about how important conservation and renewable power are to Ontario's electricity system, and outline how the Green Energy Act will give both a much higher profile.

I'm also going to build in some time at the end for a q and a.

So here we go.

To begin, let's go back to the early days of this decade, a few years after the breakup of the old Ontario Hydro.

At that time, Ontario was not attracting enough investment to ensure sustainable long-term supplies of electricity. This was a situation common to other jurisdictions that had abandoned their century-old monopoly structures for supplying electricity and had restructured along competitive lines.

And even as investment was falling below necessary levels, the requirement for new infrastructure was growing significantly, for several reasons.

One reason was a steady increase in growth in demand for electricity, spurred by robust economic growth and the fact that Ontario remains the prime destination for new immigrants to the country.

The need for new infrastructure was also being created by an unprecedented confluence of events on the supply side of the equation:

- Ontario's nuclear fleet, which supplies about half the province's electricity needs, would soon be reaching the end of its service life and would need to be replaced.
- In addition, the province's coal-fired generation capacity, supplying about 20 percent of total electricity, was being phased out for environmental reasons.

The deadline for going off coal remains the end of 2014, and our whole industry is working toward that date with growing confidence that we will be ready.

At the same time, there was a growing realization that the province's electricity system had to be placed on a more sustainable basis over the long term:

- Conservation was expected to play a much greater part in meeting future demand than it had in the past, and
- There was also a desire to create a more diversified power system in which smaller-scale renewable projects could play a greater role.

Clearly this was not a situation where the suppliers of traditional generation capacity could plan in isolation, while the conservation proponents did their thing in another corner, and the small-scale energy developers tried to somehow play a greater role in a system set up for large centralized power plants.

Instead, there was a need for an integrated plan in which all of these vital elements – conservation, renewable energy, conventional generation and the modified transmission system needed to tie it all together – could be developed in a coordinated manner.

That's why the Ontario Power Authority was created in 2004 – to develop an integrated power system plan. Our other major responsibilities include:

- leading and coordinating conservation initiatives across the province
- ensuring investment in new generation where needed.

It may also help your understanding of what we do by quickly listing some of the things that we are not responsible for:

- We don't own or operate power stations – that's the job of Ontario Power Generation and a number of other private companies.
- We don't own or operate transmission facilities – that's the job of Hydro One and other transmitters.
- And we aren't involved in local distribution – that's the job of organizations such as the local electricity utility in your community.

Not having vested interests in any of these areas allows us the independence and freedom to acknowledge and support the best integrated solution to a region's specific needs.

Now, getting back to the plan – after a lot of consultation and analysis, the Power Authority submitted the Integrated Power System Plan, or IPSP, to the Ontario Energy Board in the summer of 2007.

The IPSP is Ontario's first long-term electricity plan in more than a decade. It provides a blueprint for what is needed in terms of conservation, supply and transmission infrastructure to reliably serve Ontario's electricity consumers for the next 20 years.

It provides the basis for immediate decisions that need to be made to develop our electricity system. It presents options for the medium term. And it preserves opportunities for the longer term.

And while it's a 20-year plan, it needs to be revisited and updated every three years to adapt to new knowledge, opportunities, challenges and technologies.

The long-term aspects of the plan – out to 2025 – are really more a list of possibilities than a firm plan.

That leaves the five- to 10-year period we are in now as our focal point.

Given the relatively long lead times for electricity development, many of the near-term elements of the plan are already underway.

The IPSP contains the toughest conservation targets in North America, and it proposes to double the amount of renewable power in Ontario by 2027.

It also identifies areas like the Northern York Region and Kitchener-Waterloo-Cambridge-Guelph where local supply would need to be boosted, despite expected conservation gains.

And that is the key to our resource planning priorities at the OPA to ensuring a reliable supply. We consider conservation first, before considering supply options such as renewable power, gas-fired peaking plants and major new baseload supply like nuclear.

The IPSP also identifies a number of transmission enhancements to transport renewable power from more remote locations.

Last fall, Ontario's Minister of Energy and Infrastructure, George Smitherman, asked the OPA to revisit parts of the IPSP to see if we couldn't accelerate the conservation target and increase the role of renewable energy and distributed energy.

Specifically, the Minister asked the Power Authority to look at:

- the amount and diversity of renewable energy sources in the supply mix
- the viability of reaching stated conservation targets more quickly, including a review of the deployment and utilization of smart meters
- improving transmission capacity in certain parts of the province to enable the development and delivery of new renewable energy
- the availability of distributed generation, which is local generation that does not go on the bulk transmission system
- and finally, we were asked to look at enhanced methods of engagement with First Nation and Métis communities, including the promotion of partnership opportunities in generation and transmission.

Then, in February of this year, Minister Smitherman introduced the Green Energy and Green Economy Act.

The Act was designed to speed the development of renewable power, accelerate conservation efforts and build the green economy in Ontario.

Needless to say, we have had to adjust our planning to reflect these two developments. We are required to deliver an update on the IPSP to the Ontario Energy Board by the end of summer.

As to what we're going to bring forward, I like the way our CEO Colin Andersen put it in a speech last week – the IPSP if necessary, but not necessarily the IPSP.

The OPA produced the IPSP as part of its mandate to secure Ontario's long-term energy supply. And it has contributed to the stability of Ontario's electricity supply today.

Increasingly, though, the only way we can capture all of the variables down the road is to move to scenario-based planning.

We do not know how long or how deep the recession will be. We do not know when and how strong a recovery we will have. And we do not know whether the demand declines of certain heavy industrial users such as the auto makers and pulp and paper companies are permanent. We do not know how strong the response to the new Feed-In Tariff (or FIT) Program of the Green Energy Act will be.

In the face of these unknowns, the Power Authority needs to be nimble, responsive and flexible. In planning terms, this flexibility translates roughly into "we'll decide what we need when we need to decide."

Conservation and energy-efficiency results and uncertainty about customer uptake of programs and energy-efficient investments introduce further uncertainty and another reason to be flexible.

This is probably as good a time as any to leave the IPSP and talk a bit about conservation in Ontario.

Although much of the new focus recently has been on the renewable power aspects of the proposed Green Energy Act, conservation and energy efficiency remain first on the list.

We all pay for conservation and generation initiatives through the rate structure. But the cheapest megawatt of electricity remains the one you don't have to generate in the first place.

That will become even truer as more greener and cleaner (and more expensive) power comes online in the next few years.

Conservation and energy efficiency will become even more important.

We're engaged in the largest conservation effort in Ontario's history...and one of the most ambitious in North America – some say in the world.

Ontario's target is a reduction in peak demand of 6,300 megawatts by 2025 – the equivalent of removing one in five users from the grid.

We are not aware of any other jurisdiction in the world that has taken on this great a challenge. And we continue to look for opportunities to accelerate that target.

What this means, however, is that achieving our targets to ensure a reliable and sustainable supply of electricity will not be easy.

Success will require the collective actions of all – local distribution companies, businesses and individuals.

We have developed a portfolio approach to conservation programming, which ensures we have programs in place for every sector of the economy.

This is a short list of examples of some of the programs we offer under each of our categories.

For business:

**Electricity Retrofit Incentive Program** – this offers financial incentives to commercial and institutional organizations for electrical retrofits, primarily replacing inefficient products with high-efficiency ones to lower operating costs.

**High Performance New Construction** – is for non-residential new construction and major renovation projects, and it includes design assistance and financial incentives to motivate builders and developers to incorporate sustainable and energy-efficient features.

For industries:

We offer a suite of **demand response programs** that enable industries to manage their electricity demand in response to supply conditions – customers reduce their consumption for brief periods of high demand and get compensated for doing so.

For residents:

**Every Kilowatt Counts Power Savings Event** – this is a coupon event that features savings on a number of electricity-saving products, which ended on May 22. Coupons were available online or at participating retailers.

**Great Refrigerator Roundup** – this is a program where we offer free pick-up and disposal of electricity-guzzling, older refrigerators, as well as freezers and room air conditioners. This is run in co-operation with local distribution companies and has created about 100 new green jobs at the recycling facility in Oakville.

**Enabling programs** include our initiatives to raise conservation awareness as well as two funds we manage to help support conservation pilot projects and new technologies that can improve electricity supply or conservation.

So that's some of the flavour of what we're offering. More information on these and our other programs can be found at [www.everykilowattcounts.com](http://www.everykilowattcounts.com).

The Power Authority also works for changes in energy-efficiency codes for buildings and standards for electrical appliances and various kinds of equipment. We estimate that codes and standards, together with pricing, may account for up to 75 percent of conservation gains in the long term.

These changes require long lead times and involve enacting regulations or legislation. Results are slow in coming as they rely on the turnover of capital stock in housing, machinery and appliances, but the effects are sustained over time.

Our research indicates that the most successful conservation efforts use a combination of programs (pull) and changes to codes and standards (push) to achieve long-term results.

As I mentioned at the outset, we have high hopes for the role smart meters and time-of-use pricing will play in conserving electricity.

More than 2.4 million smart meters have been installed across the province, and by next summer, one million Ontario households will be on time-of-use rates.

Time-of-use pricing is indeed what makes our smart meters "smart" by telling us how much electricity we are using throughout the day. They offer customers a new level of engagement and a new level of control over their electricity use.

So how are we doing so far?

We achieved our first interim target of a reduction in peak demand of 1,350 megawatts in 2007. And we're working toward shaving another 1,350 megawatts by 2010.

We can also point to a number of other indicators:

The Canadian Energy Efficiency Alliance gave Ontario a much improved "A" grade on its last report card, up from a "D+" in 2001, due to the increased attention given to conservation and energy efficiency.

In August 2008, 38 Ontario communities participated in the Blackout Day Challenge, which speaks to the growing awareness of electricity use and conservation.

Changes to the Ontario Building Code ensure that homes built since 2007 are 20 percent more energy efficient than their predecessors.

Eleven Ontario government ministries have implemented updated Statements of Environmental Values affirming their commitment to energy conservation.

Twenty-two communities across Ontario have appointed Municipal Energy Conservation Officers to be the conservation champion in their community.

And we've just successfully concluded our second annual province-wide Energy Conservation Week.

Looking ahead, the Green Energy Act will elevate the profile of energy conservation even higher.

- Energy efficiency will become a key purpose of the Ontario Building Code.
- It will establish North American-leading energy-efficiency standards for household appliances.
- Energy audits will be mandatory for the sale of homes – unless waived by the purchaser.
- New financing tools will be available to help with the costs of small-scale renewable energy projects.
- Local distribution companies will have conservation targets to meet through programs for homes and businesses – the OPA is working with the Ontario Energy Board to assist with this effort.
- Industrial productivity will be increased through energy-efficiency programs and demand management plans.
- Low-income Ontarians will be protected from energy price increases.

So, as I said, a higher overall profile for conservation than ever before and a heightened focus on partnership and collaboration between the Power Authority, the local electricity utilities and others.

The bottom line is that each organization will concentrate on what it does best. Not only is there room for all of us – in fact, we NEED everyone to work together or we won't meet our aggressive 6,300 megawatt target set by the province.

We need everyone across Ontario to become champions for energy conservation.

And we need to focus on the benefits, not just the process.

We're reducing greenhouse gas emissions by 75 percent by 2020. That translates into cleaner air, a healthier population and a higher quality of life.

I'd like to turn now to the Green Energy and Green Economy Act and how it will accelerate the development of renewable power – wind, water, solar, biogas and biomass.

First, let's have a look at the current strength of Ontario's renewable power resources.

- Procurement programs have already brought almost 1,000 megawatts of new renewable energy online since October 2003, and by the end of 2009, this number will increase to 1,200 megawatts.
- In total, Ontario has more than 3,100 megawatts of renewable energy projects under contract.
- Investments in these projects have totalled \$4 billion.

Big transmission build-out is needed to connect the new renewable energy to consumers across the province.

The Green Energy Act will accelerate the development of renewable power by establishing the first comprehensive feed-in tariff in North America. A feed-in tariff, or FIT, offers stable, competitive prices for renewable energy under long-term contracts.

The OPA is responsible for designing and implementing Ontario's FIT program. This program will provide certainty to developers of renewable energy and position Ontario's electricity system as a good place to invest. The goal is "cleaner, greener and online quicker."

It will draw investors and entrepreneurs off the sidelines and into the game...sparking Ontario's renewable energy renaissance.

The FIT program will help the province advance two important initiatives:

- It will help us at least double renewable energy resources in Ontario.
- And it will help Ontario phase out coal-fired electricity generation – the largest climate-change initiative in North America.

The Power Authority has developed and refined the FIT program through an extensive stakeholder consultation process. This process included eight workshop sessions and an online forum. We also held three additional meetings with First Nation and Métis representatives in April to explain the FIT Program, respond to questions and solicit feedback for improvement.

And we've revised the program along the way in response to the feedback that has been provided.

Not surprising, we've received the most amount of feedback on the FIT pricing – everyone has a great interest in pricing. The prices were designed to cover costs – including capital, operating,

maintenance and connection – as well as provide a reasonable rate of return over the term of the contract.

Separate prices have also been proposed for community-based or Aboriginal projects in appreciation of a potential longer lead time and capacity building that might need to be developed.

The prices and size tranches have been developed using recent market data, our experience with other renewable energy contracts and the experience in other jurisdictions, including typical project sizes and installed capital costs shown on the slide.

The prices are designed to balance several objectives:

- 1) to promote broad participation
- 2) to provide price stability to promote the green investment objectives under the GEA
- 3) to encourage efficient project development – the balance of enabling versus overpaying and management of the rate impacts.

We will closely monitor the uptake and reassess, especially for material changes such as equipment supply costs and exchange rates. Based on feedback from the stakeholder sessions, we plan to review the pricing every two years at this point.

We are also working to ensure the success of the program by developing resources to help potential developers take advantage of the opportunities provided by the FIT Program.

For example, online training resources will be available after the program launch to help guide potential applicants through the FIT process. We will also start holding workshops this summer to educate local utilities and the members of renewable energy and community power associations. And we are currently preparing Google maps to show transmission capacity across the province on a real-time basis.

Under the Green Energy Act, municipalities will be allowed to develop their own generation projects. So will local distribution companies, as well as other community-based organizations. As municipal officials, the action is shifting – literally in some cases – to your backyard.

We have lots of potential renewable supply and, not surprisingly, there is lots of interest – especially with the promise of the FIT Program.

In fact, 150 developers responded to our survey indicating a potential 15,128 megawatts of renewable energy projects across the province. To put that into perspective, we have a total of 33,000 megawatts of installed capacity from all sources.

This level of interest, however, highlights the significant need for new transmission and distribution infrastructure investments to bring our potential new supply onto the grid.

We have been working closer than ever with Hydro One, the Independent Electricity System Operator, Ontario Power Generation, the Ontario Energy Board and the Ministry of Energy and Infrastructure to prioritize where those investments need to be made.

And, as Minister Smitherman has said, he's prepared to help kickstart these projects by way of a directive.

We are also working with the government on key regulations needed for the FIT Program launch, including special funds for Aboriginal and community-based projects.

And we're working with the local distribution companies to define their roles and responsibilities in administering the FIT Program.

Smart meters and the development of a smart grid will also help us to harness the benefits of distributed generation, allowing an increased role for renewable energy supplies in meeting provincial demand.

The feed-in-tariff will accelerate the already impressive growth of renewable energy in Ontario.

Renewables already account for approximately 25 percent of the province's electricity generation, an amount envied by many jurisdictions.

By the end of 2009, Ontario will have almost 9,000 megawatts of renewable supply.

The pursuit of renewable power is good news for our overall power supply situation.

The IESO forecasts that Ontario is in good shape for the approaching summer peak season. Of course, other factors have also contributed to the improved reliability of the electricity system, including a decline in demand during the current economic downturn.

But the OPA has to plan for the long term, which includes replacing our coal-fired generation by 2014 and replacing or refurbishing our nuclear plants as they reach the end of their service lives over the next decade.

Ontario's current nuclear power capacity is 14,000 megawatts, and the goal is to maintain that amount of capacity to meet the province's baseload needs.

Natural gas plants will round out the province's electricity supply mix to meet peaking needs. Pumped storage is another resource we are looking at in terms of meeting peak demand.

So, in summary, Ontario's electricity system continues to evolve.

Conservation and generation are being decentralized. And we expect to spend more and more of our time and expertise working through the various issues that arise at the local level.

This “micro” development of our system is increasingly essential. And from a planning perspective, collaboration at the local level is becoming increasingly important as well.

This so-called “Smart Grid” is a way of describing what needs to happen to local utility systems to enable this new two-way flow of energy and communications as small users become small producers as well and become more involved in the operation of the electricity system.

At the same time, the OPA will continue to have an obligation to plan province-wide, at a “macro” level. We will have a foot in both camps.

So it’s an exciting time as I said at the outset. We’ve got many balls in the air at the moment, including:

- a trailblazing new feed-in tariff for renewable energy sources
- groundbreaking green energy legislation
- eliminating coal – North America’s single largest climate-change initiative
- significant transmission and distribution build out
- smart meters, time-of-use pricing and a smart grid
- a diversified supply mix with a 20-year plan
- greening our electricity infrastructure
- and last, but certainly not least (first on our list, in fact), North America’s most ambitious conservation target.

The establishment of the Power Authority in 2004 coincided with the tremendous era of change we are now in.

For me, it’s been a happy coincidence. Electricity stands at the crossroads of so many important agendas in our society – energy, the environment, economic growth and greater opportunity.

It has been very satisfying working toward goals that I know will strengthen our province and raise our quality of life.

With all this change, there is one constant, though, and that is the Power Authority’s commitment to ensuring Ontario always has an affordable and reliable supply of electricity.

Reliability is the gold standard in our industry. And everything I’ve discussed today – conservation, renewables, new local supply – all contribute to the long-term reliability of the system and the opportunity for Ontario to build a sustainable economy and a sustainable power system.

Thank you, and I’d be happy to take some questions now.