

Notes for Remarks

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The role of Consumers in the Electricity System

I am really pleased to be back at the Energy Matters Summit. I always get a sense of 'things happening' here... people exchanging information, going back to their places of work and making a real difference in the way they run their operations.

It's on that theme of making a difference that I would like to talk today.

We in the energy sector have long been generation-focused. Demand goes up, we ramp up a generator. Demand goes down, we ramp down a generator. Traditionally, system management has been a very one-sided – although very predictable and reliable way of doing things.

This is changing. The balance of power is changing. No longer will consumers sit on the sidelines and watch the rest of the electricity sector set the game plan.

And before you think it's a bit of a mismatch, let me show you what kind of power consumers can exercise.

I want you to think back to the Vancouver Olympics in February. How many of you watched the Canada/US gold medal game?

Consumer Control and Gold Medal Hockey

During that match our control room didn't have to watch the game to know when the periods ended. During each period, consumers were glued to their TV's and demand was flat. Suddenly during the intermissions, people changed their behaviour - getting up, using the bathroom, opening the fridge, getting a snack or fresh beer and sitting back down in front of the TV- and it had a dramatic impact on electricity demand in Ontario. Actually, my operators claimed they just had to watch the game because it was having such a large impact on the provincial demand; pretty convenient.

This is a slide of electricity demand in Ontario during the game when roughly 80 per cent of Ontarians (according to the Nielsen ratings) watched the game.

The grey line shows electricity demand the Sunday before. The yellow line shows demand on game day. You can actually see when the game started, when the periods ended and when the winning goal was scored.

Imagine if we could harness this type of impact in a more co-ordinated way. That's what today's discussion is about: how you as consumers can work to influence the way the system is managed and make it work better to meet your needs and to meet mine as well.

It's great to be here again this year. The Region of Peel does a tremendous job in energy management in their own operations and by bringing communities and public sector organizations together from across Ontario.

It says a lot that you come together to willingly share your successes, ideas and lessons learned.

In that way - the IESO that I oversee - is like your organizations. We want to share as much information and support as possible about energy and electricity to help you be successful.

Last year when I was here I spoke about a lot of the change that was coming and since that time you will have experienced some of it first hand.

Let me start by highlighting some of those important changes and the important role you, as consumers and energy managers, play.

Changes

The Green Energy Act, introduced a year ago, has really changed the way Ontario will meet its energy needs.

The feed in tariff program (both FIT and MICROFIT) – that provides a standard rate for renewable energy projects has been launched, and already 694 contracts in 120 communities have been offered.

Most of these are small solar projects but they also include large on-shore and off-shore wind, as well as biomass, biogas, water and landfill gas.

Already the response has far exceeded expectations; more than 9,000 MW of applications, 2,500 MW of FIT contracts have been awarded so far.

This is in addition to the 1,100 megawatts of wind already connected to the transmission grid. Output from these facilities reached 2.3 terawatt hours (TWh) in 2009. That is equivalent to the consumption of the City of Oshawa for two full years.

With the FIT and the Samsung contracts there are plans in place to add another 3,500 MW of wind to the grid in the next few years.

Another major change that we've seen is the reduction in industrial demand due primarily to the economic downturn.

This had a major impact on what we refer to as surplus baseload generation. Since I spoke to you last year, there have been many hours when we have had more nuclear, wind and water powered generation than we can consume; during these periods the market price is very low or even negative. What this also means is that during these times all of the electricity being used by Ontarians is coming from carbon-free sources. This is good news and we expect to see more of this in future.

At the same time, last year output from Ontario's coal-fired plants dropped by 60 per cent drop – to the lowest level in 45 years.

Along with the changes on the supply side, major transmission expansions are underway or planned to allow us to connect more renewables - bringing power from more remote parts of the province to southern Ontario where it is being used.

However, even with the massive expansion of renewables, nuclear and gas will continue to account for the majority of our power needs. As green as

we're becoming, there will continue to be important environmental and economic benefits to conserve, reduce waste and use energy wisely.

All of these projects are needed to ensure we can meet our future needs. Of course we will have to pay for all of this build.

I know that many of you here will be aware of the changes taking place in electricity prices.

As most of you here pay the hourly price or have a contract for electricity – you've seen this most clearly through the increases to the Provincial Benefit listed on your bills.

This charge covers the costs of building new plants, upgrading aging infrastructure and greening the system through conservation, demand response and cleaner generation.

Increases to the Provincial Benefit will continue as new generation comes into the mix – increasing the value for all consumers to more closely manage their energy costs.

As you know, public sector consumers have been on market rates since last November – with many starting even earlier than that because it's more cost effective than the regulated price plan (RPP).

That's because the hourly price provides you with more options as you look for ways to bring costs down. You can take advantage of the low or even negative prices, that you wouldn't otherwise be able to on the RPP.

Don't think that your efforts to conserve and shift energy use are purely self-serving. There is a greater purpose at work.

Why the Role of the Consumer is So Important

As market and system operator we see a clear need for consumers to become more active in their energy choices. Demand and supply are changing and both are becoming more variable.

The increase in renewables in the mix is changing the availability of generation or the shape of our supply curve. The wind doesn't always blow and the sun isn't always shining.

With FIT and microFIT projects at the home and community level, the profile of demand for electricity across the province is also changing.

We need consumers to think about how much power they are using, when they are using it and how much they are paying for it.

By monitoring the price signals and your energy use, and by taking advantage of the programs available for conservation and small scale generation, you are taking on a very important role in ensuring energy efficiency. Not just for your own buildings but it helps ensure the entire grid is being built and working efficiently.

Prices are the most powerful way for us to signal to consumers what times are best to use power. They help co-ordinate consumer activity so that it can work in greater sync with what's happening on the production side.

High prices generally mean that supply is tight and any reduction in consumption will help reduce strain on the system and help us avoid ramping up even more expensive generation. And on the flip side, low prices can communicate the kind of surplus conditions I described earlier

and encourage consumers to shift to those times and make better use of our existing resources.

That's why we at the IESO are so supportive of your work to better manage your electricity use.

We have seen many examples of engaged consumers that are putting energy management at the top of their agenda. Here are three observations of how the public sector has, and can continue to show leadership in energy management.

First, there are no diminishing returns on education and training. A survey we did shows that once people are engaged - through workshops or information sessions - they implement more energy management projects. And once organizations succeed with some projects they want to go back and learn even more to tackle the next set of potential projects. Even more encouraging is that their management and Board of Directors become more supportive of energy management training.

Second, because the public sector often has many facilities or similar buildings in the same area, it is easy to benchmark their energy

consumption against one another. The City of Oshawa had a contest among eight recreation buildings to see if they could save money simply by changing operational procedures. The buildings saved between 10 and 45% of their electricity without spending any capital.

The third example is to engage all staff and building occupants. So often energy management and planning can rest in one person's hands, but it is the rest of the staff that control usage in the office, conference rooms and maintenance areas. We have seen examples in hospitals, long term care homes, municipalities and even schools, where energy use is communicated to everyone in the facility. Once staff see the results, it has a two-pronged effect: they know the decisions they make do save energy, and they take that information home, and save money in their own house.

What does this mean for consumers in the future?

So I've spoken about the changes we're witnessing today, but what does the future hold?

As I said at the opening of my remarks, the balance of power is changing. But for this shift to take place, consumers will need an arsenal of tools to

help them control their energy use and then reap the benefits of their actions.

We need the kind of communications and control technologies on the demand side to track and relay information that we currently have on the supply side. In our operations we know the status of every breaker and switch and we see the change in voltage levels and generator output every six seconds.

Now, we may not need the same level of sophistication, but consumers have been largely a silent force in the grand scheme of things. And this is where smart grids come in.

Smart grids are many things. But in short it centres on the pervasive exchange of information between consumers, producers and utilities to improve the production, delivery and use of electricity.

I don't think we fully appreciate how much we're ahead of the curve in Ontario with the installation of smart meters in all homes and small business. By next year, most low-volume consumers will have smart meters installed in their homes and will be paying time of use rates. This

creates an enormous opportunity for Ontarians to become the most engaged and active consumer base in the world.

Smart meters open the door to a myriad of opportunities. By tracking and paying for hourly consumption, consumers can now benefit from changing their consumption behaviours. But it will be critical to have automated technologies available. Here's a quick list of some of the things that are on the horizon:

- Whirlpool says that all their appliances will be smart grid compatible by 2015 – with the first smart clothes dryers hitting the stores next year. Consumers will be able to program these appliances to respond to price or system signals. A sort of “set it and forget it” approach.

- Not one to be left out of the leading edge ... Google has been testing its power meter in many pilot projects around the world... allowing consumers to see real-time energy use online and on a blackberry. You can set targets for energy reduction and it predicts your annual costs... It even sends you a reminder email saying whether or not you are on track to meet your target.

- With the introduction of the microFit program – consumers are also becoming producers – displacing their energy use by meeting their own needs – and even injecting back into the system.

- At the IESO, we want to involve consumers in areas of the market traditionally geared towards generators. We are launching a pilot to see if consumers can compete with generators to provide regulation service to the electricity market. Regulation is the fine tuning we use to automatically balance demand and supply minute to minute; and we pay a small number of generators for this capability. By providing regulation service, consumers that participate would vary their electricity consumption in response to signals from the IESO.

- One company, Sempa, wants to actively work with consumers, such as water treatment plants, who might be good candidates to participate in providing this service.

- And, of course, we are on the cusp of commercialization of the electric vehicle. Motorists will become electricity consumers as well.

With this core smart meter infrastructure in place, our province can be a groundbreaker in creating a new consumer class. And while the technology is emerging quickly, consumers will need to understand how best to incorporate it into their daily lives and learn what makes sense for them and what doesn't.

But this is a complex business and becoming increasingly complex as each day passes. We, in the electricity industry, have a role to play to cut through the noise and present consumers with a clear and concise view of what their choices really are.

At the end of the day, Olympic gold medal hockey games are only every four years and I doubt that tonight's Detroit/Phoenix game will generate the same level of interest.

That's why I look to the group here today. Your sector is increasingly becoming a dynamic customer group. It's important to share the lessons you are learning.

I learned a new term the other day 'hiving.' It's the process of gathering information or experience, bringing it back to the home base and then

sharing it with others. Much like a bee gathers information about where all the good pollen is and brings it back to the hive. Cascades Fine Paper applies this term to their sustainable development initiatives. Whenever they have a successful project it's not complete until they share the lessons learned with their suppliers and customers.

Energy managers in the public sector – are doing exactly this. Sharing everything you learn with fellow employees, colleagues, customers and stakeholders.

But you see the point. Consumers won't become a driving force in the sector until we have the skills, technology and the knowledge to make that happen.

At the IESO, we are behind your efforts every step of the way – because we believe a more engaged consumer base, makes for a more efficient and reliable electricity system.

Thanks very much and enjoy the rest of your day.