



# **Energy Planning A Key Component of Community Sustainability**

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Good morning.

I'm very pleased to see so many people gathered here today to explore the important topic of Sustainable Development in Communities.

In Ontario, we measure our success of achieving sustainable growth and development in our communities in a way that balances economic, environmental and social concerns.

According to the **2007 Ontario Community Sustainability Report** issued by The Pembina Institute, "Canadian cities are regularly identified as among the healthiest, most prosperous and most desirable places to live in the world."

We have a lot going for our communities, but room, nevertheless, exists to make improvements.

The report continues by saying, "It is increasingly apparent that our urban system is under considerable strain. Canadian cities are growing largely at the expense of the natural environment, are unable to meet their infrastructure needs without pushing municipal governments beyond their fiscal capacities, and continue to be marked by social inequities."

Meanwhile, our electricity system is also under considerable strain. As our communities have grown and prospered, the demand for electricity has increased to the point where Ontario has difficulty meeting, under certain conditions, its energy needs at peak times. Furthermore, between now and the year 2025, Ontario must build almost an entirely new electricity system.

According to the Ontario Power Authority's Integrated Power System Plan, peak demand is expected to grow by 8000 MW between now and 2025.

On the supply side, 80 per cent of Ontario's existing generating capacity, or some 24,000 MW, must be replaced over the next 20 years. A large portion of new supply is being targeted to be from renewable sources that will require new transmission lines to be built.

The challenge is especially great since the Province, through the Ontario Power Authority, has set targets that largely offset the impacts of population and economic growth, through conservation measures. The plan calls for decreases in energy demand to below 2006 levels by 2010 and keeping demand there until 2022. This represents 6300 MW of conservation effort.

The Integrated Power System Plan, or IPSP, represents \$60 billion in investment required with \$10 billion earmarked for conservation.

With all this investment and rebuilding going on in the energy sector, a huge opportunity exists for communities to participate in contributing to sustainable energy supply and demand solutions.

With Ontario communities set to add another four million people over roughly the same period, the connections are clear: progress and development simply can't take place without a reliable supply of electricity. Further, in order to build sustainable communities, innovative and inspired energy planning must take place long before shovels are put into the ground.

## **Economic**

Let's take a look first at energy planning with regard to the economic leg of community sustainability.

Something called "smart growth" should be what we are striving for.

Over the five years between 2001 and 2006, the population of Hamilton grew by 14,000 people or 2.9%. In the Niagara Region, the growth was 4%.

And, despite the fact that every time I drive into Toronto there seems to be a new crop of condos in the city core rising up beside the Gardner Expressway, Toronto's growth rate has been less than 1% over the same five-year period. Expansion for the City of Toronto as a whole has virtually come to a halt.

On the other hand, outlying suburban communities such as Halton and York regions have seen their populations explode by 17 and 22 per cent respectively.

As an electricity distributor, I look at those last two growth numbers and can appreciate the amount of effort that goes into bringing new infrastructure into those booming communities – new roads, waterlines, and sewers, as well as new electrical transformer stations and many kilometers of underground cable or overhead wires.

Giving due regard to the principles of sustainable development requires us to look at the total cost of the community development.

So, what would that look like in the realm of energy planning?

Well, first off, in the course of assessing a proposed, sprawling urban development, we would need to consider the economic impact of bringing power to the outlying development areas.

The municipal planning process with regard to assessing energy impacts of community developments must become more developed, explicit, and formalized.

Since electricity market reforms and the “unbundling” of the energy sector, no one entity is responsible for performing comprehensive assessment of energy planning needs for a community. The local distribution utility concerns itself with distribution infrastructure and plans accordingly. The transmission service provider concerns itself with transmission

infrastructure and plans accordingly. The Ontario Power Authority concerns itself with energy conservation and procurement and plans accordingly.

A need exists for someone to assume a leadership role in providing a component of what should be a cornerstone element in the municipal planning process. The local utility distribution company, in partnership with the municipality, is ideally suited for this task and should be required to provide this community service.

Communities must understand what the incremental cost is of the energy, transmission, and distribution assets that need to be installed to support development. The community must be allowed to see these costs in a transparent manner so as to be able to exercise its judgments in evaluating alternative energy plans in a manner that supports sustainable growth.

The current system of utility expansion to accommodate large area growth allows “pooling” of costs so that all system users, including existing customers, share in the incremental costs to connect. The advantage of such a methodology is that it allows rate stability and facilitates development.

The downside, however, is that the connection costs for the new growth is economically undervalued and alternative energy options are too quickly discounted as being not viable when, in effect, we are often not making comparisons on an apple-to-apple basis.

As a further lever, the Planning Act should be amended to permit municipalities to make energy efficiency design requirements a condition of planning and site approvals for new development.

Planning for electricity should be no different than the process for water and wastewater. Sufficient supply and infrastructure must be secured prior to approving developments.

A prime example of an area in the Province that is experiencing continued dramatic growth while already suffering from electrical system constraints is York Region. This community's development has outpaced the ability for the electric system to supply its needs into the future. The situation is not easily resolved. Attempts at correcting the situation are meeting vocal opposition from established communities whose residents bought into the communities not realizing that new transmission lines or power plants would have to be located nearby.

We must ensure that going forward, in planning new development, municipalities work hand-in-hand with their local electricity distribution company. By involving them in planning meetings at the very early stages, there is the opportunity to investigate options, involve transmitters and other agencies, and provide solutions as a partner in the community.

## **Environmental**

Now let's consider some of the environmental aspects of sustainable communities with regard to energy.

Development is sustainable when it conserves resources, avoids damaging ecological processes and contributes to social equity, quality of life and a vital, diverse economy.

Conserving resources and avoiding damaging ecological processes are not the things I think about when I drive down the 400 series highways. I think of the damage to the air quality in our communities in the Golden Horseshoe area when people sit for hours on the QEW trying to get in and out of Toronto, burning fossil fuels for every minute they are in traffic.

In fact the most effective way to cut energy use dramatically is to build communities where people can live, work, and access food sources, as much as possible, locally.

In 2006 the Province released the Growth Plan for the Greater Golden Horseshoe area.

The plan aims to:

- Revitalize downtowns to become vibrant centres,
- Create complete communities that offer more options for living, working, shopping, and playing;
- Provide greater choice in housing types to meet the needs of people at all stages of life;
- Curb sprawl and protect farmland and green spaces and;
- Reduce traffic gridlock by improving access to a greater range of transportation choices.

Core in achieving this plan is the concept of intensification – development of a property, site, or area at a higher density than currently exists.

In the electricity business, we are witnessing a sea change in customer attitudes around energy conservation. They are making the connection between turning off their lights and improving the environment.

Two years ago, we were concerned that the public would be resistant to the idea of smart meters. Today, after installing 40,000 smart meters, we have customers calling us asking us to install one because they want to get a better handle on their energy usage.

In addition, there is a growing interest in renewable energy sources – wind, solar, biomass and geothermal.

Today's customers are demanding self-sufficient solutions. At every Home Show and community event we attend, customers express their profound interest in renewable solutions. We are constantly fielding questions about solar panels, wind turbines and other forms of renewable energy.

Today, utilities permit residential and small commercial connections to be fully equipped for net metering. This means that customers, who are willing to spend money to build a system to generate their own power, have the ability to sell excess power to the grid.

But outside of personal social conscience, the incentives are simply not there to encourage individuals or businesses or municipalities, for that matter, to develop net metering solutions.

Horizon currently has only one net-metered customer connected to our distribution system. My guess is that if the financial incentives were higher, we might have a lot more people signing up for net metering.

I believe if the financial incentives were in place, the sustainability of our communities could be enhanced, but first we would have to have to rethink our old ways of energy planning. Horizon Utilities Corporation included, needs to work with the rest of the industry and our regulators to look at current barriers that exist in connecting innovative new loads to our system. The traditional methods simply break down and are disincentives.

Increasingly communities need to start thinking about providing their own energy sources.

Communities need to think in terms of community energy plans. The City of Guelph in 2004 formed a community based stakeholder group to develop such a plan. Last year the plan was formalized at Council. I believe this plan is a first of its kind. I urge everyone to go to the City of Guelph website and look at what Guelph has done so that it may be a model for energy planning for other municipalities.

Hamilton has also been active in providing community energy solutions. Hamilton Community Energy – a related company of Horizon Utilities, implemented a district



heating system five years ago. From an unobtrusive facility located kitty-corner from Copps Coliseum in Hamilton, Hamilton Community Energy provides thermal energy in the form of hot water to 14 buildings in the downtown core.

Maybe we need to think in terms of allowing the municipally owned utility to own wind farms to power outlying communities with good wind regimes.

Maybe we need to explore turning the parklands in our planned communities into geothermal solutions to provide heating and cooling for homes in these new residential neighbourhoods. Better yet, maybe today's parklands can be turned into geothermal solutions for older subdivisions.

Municipalities have a role to play in changing bylaws, influencing policy, and in leading by example.

But maybe you are thinking some of the ideas I mentioned are too far-fetched – too far in the future.

Not a problem. There are lots of opportunities for municipalities and commercial enterprises to start making a difference - now.

In the recently released 2007 Annual Report of Ontario's Chief Energy Conservation Officer, Peter Love states that coming improvements to building code standards will result in 500 million kWh in savings.

LEED, an acronym for Leadership in Energy and Environmental Design, is a green building rating system that recognizes the environmental sustainability of buildings.

LEED certification projects are on the rise everywhere. Municipal Planning Departments need to somehow recognize and encourage LEED project initiatives. In our service

territory, Brock University Plaza Building achieved LEED Silver Certification on July 24<sup>th</sup> 2007.

Peter Love's report also talks about passing legislation that would prohibit municipalities or condo developments from forbidding clotheslines.

It's funny, when we go to Europe or other foreign countries, we take pictures of laundry hanging from people's windows because it looks so picturesque. I wonder how many of us consider that the reason much of Europe has never adopted clothes dryers is the fact that they have to pay so much for electricity.

Of course, air conditioning is a similar story. It is considered a luxury in many, many parts of the world. Here in Ontario, where we have four seasons and an extremely short summer, we consider it a necessity and a right.

Curious, isn't it?

For those of you who operate service fleets of some sort, let me give you something else to think about.

At Horizon Utilities, we have a large fleet of vehicles to support our people in providing service in the urban communities of Hamilton and St. Catharines. Two years ago, we decided to include specifications in our new vehicle assessment programs to address climate change considerations. We now have one of the largest fleet of hybrid vehicles of any local distribution utility and consider low emission fuel alternatives such as ethanol or bio diesel in our procurement specifications.

And clearly we are not alone. A joint advertising supplement from BMW, GM and Toyota featuring hybrid and fuel-efficient vehicles appeared in the July 22, 2007 issue of Canadian Business. Now we are hearing the overwhelming demand for hybrid vehicles has lead to a back order situation. If the automotive sector is adapting to consumer

needs and coming together, why shouldn't leaders of other industries and service sectors start to heed the same challenges?

Looking to the future, at Horizon Utilities we will be utilizing new technologies that will help our staff plan their travel routes in the most efficient manner possible.

And what about each of us in this room? The last time you drove into Tim Hortons, did you turn off your car and get out to get your coffee? Or did you sit for 10 minutes or more idling in the morning line-up for the drive through?

### **Social - Liveability**

Aha! But here is the crux of the matter with regard to energy conservation and this is where we touch on the third pillar of sustainability – social concerns or liveability. At what point does our belief in sustainability supersede our personal inconvenience?

Put another way, how cold does it have to be before you decide to sit in the drive-through line instead of getting out of your car?

That is the sort of intriguing philosophical discussion we have found ourselves embroiled in over the past few years in the utility industry.

I have been in the utility industry for 20 years and I simply cannot believe how quickly the industry has changed over the past five years.

In 2003, Hamilton Utilities Corporation demonstrated leadership in promoting energy conservation with the development and launch of the powerWISE brand and programs. This was an innovative move in those days.

A mere two years later, powerWISE was picked up as the brand of choice for Coalition of Large Distributors, which includes Horizon Utilities and five of Ontario's other largest utilities, for use in delivering energy conservation messages and programs to 1.7 million customers.

In 2006, powerWISE was licensed by the Ministry of Energy for use as the common brand element of their province-wide social advertising program promoting energy conservation. I'm sure you are familiar with the one featuring David Suzuki and the beer fridge in the basement.

So, today, utility companies like Horizon Utilities are on the forefront of the energy conservation movement, trying to convince people to use less of our product. An interesting business model to be sure. But with the future of our electricity supply and life as we know it at stake, we are willing to make some sacrifices.

But we are not asking customers to deprive themselves. We don't expect people to sit shivering in their homes in the dark with the television off to save electricity. We simply want our communities to continue to remain liveable – with a reliable supply of electricity and less and less smog days.

At this stage, what we really want is for residents, businesses, institutions and cities to pay more attention to how and when they use electricity and take steps to cut back or shift their usage to off-peak times. We hope that just like smoking or seat belts, ten years from now it will be socially unacceptable to waste electricity.

And we are seeing some changes ...

Just last week I was talking to some children about Generation Conservation, our new curriculum-based, 10-module, energy conservation program that we are sponsoring for Grade 5 students in Hamilton and St. Catharines.

I asked them, “What sorts of things can you do to save energy?” To my amazement, just about every hand went up! They knew why they should turn off the lights in their bedroom. They knew there is a difference between incandescent and fluorescent lights. And they were even aware of the issue of “phantom power.” If there are some of you in the room who are unsure what I mean by that term, I’d highly recommend you find a fifth-grader and ask them.

Clearly we are seeing a change in our society where people are willing to take small steps to reduce their energy consumption and improve the environment.

Lighting is probably the simplest change people can make – and I’m pleased to see that everyone involved is doing their part.

Horizon has given out over 113,000 free compact fluorescent bulbs to give customers a chance to try them out. The Ontario Power Authority Every Kilowatt Counts programs have offered customers coupons for compact fluorescent lights as well as other products. The government is considering banning incandescent bulbs after the year 2012. And the lighting manufacturers are spending big bucks developing more efficient, more aesthetic products for a variety of applications.

Institutions and commercial customers are getting on the bandwagon and taking advantage of various incentive programs to upgrade to more efficient lighting.

Mohawk College, for example, converted more than 8,600 fluorescent lights to newer, more efficient technology. The College projects these changes will result in energy reductions of more than 645,000 kWh annually, with financial savings in excess of \$82,000! That’s what I would call a bright idea!

Perhaps some of your organizations can do the same thing and start making a difference. We can even help you with that. We’ve got people here today who would be

happy to talk to you about the Energy Retrofit Incentive Program. Just talk to us during one of the breaks.

We are also very proud of the City of Hamilton for being one of the few municipalities who has hired a full time Chief Energy Conservation Officer and for the leadership they have been able to demonstrate with some of their programs.

I am very proud of the difference Horizon Utilities is making in our communities. In 2006 alone, energy conservation programs provided to customers achieved annual energy savings of more than 29 million kWh, enough energy to power 3,300 homes with tremendous savings in CO2 emissions.

These programs included giving away at community events the 113,000 compact fluorescent light bulbs I mentioned earlier along with 10,500 energy efficient night lights and 16,000 low-flow shower heads; recycling 4,000 inefficient refrigerators as part of our fridge retirement program; installing hundreds of peaksaver load shifting devices; and implementing our Summer Savings program.

Under Summer Savings, we offered a 10% rebate to customers who made some changes and managed to reduce their consumption over the summer by 10% compared to last year.

We are seeing tangible results and plan on offering new programs next year to keep the momentum going.

Achieving growth and development in a way that balances economic, environmental and social concerns is going to take teamwork.

Municipalities, utilities, commercial enterprises and residents all need to be working together to create well-designed, well-functioning communities that people want to live in – without sacrificing the environment.

It is a tall order and one we need to address now. It is about our future, and our children's future. And it is up to us. We can't wait for government to come along and tell us what to do. We need to take action today – as individuals, as companies, as communities.

So, in closing, I would like to encourage you to take advantage of this day. Take in all the presentations on the agenda. Participate in the workshops. Visit the exhibits and network with each other.

I challenge each one of you to take back with you two ideas of change which you, your family, or your organization can make to start making our communities better places to live in.

Thank you.