

## EXECUTIVE SUMMARY

The Ministry of the Environment has asked for input to a new Long-Term Energy Plan for Ontario, and provided baseline information in its Discussion Guide.

In recent weeks, however, the government has issued several statements that admit errors in past policy implementation, and reflect a new policy direction --- this is not reflected in the discussion documents.

As Ontario is seeing unprecedented levels of “energy poverty” in which literally thousands of citizens have become unable to pay their electric utility bills; social assistance organizations such as the United Way and the Ontario Association of Food Banks have sounded the alarm about the seriousness of the situation.

The Premier and Energy Minister both have stated that Ontario’s new goal is to reduce costs in the electricity sector, and to reduce consumers’ electricity bills.

The government policy to promote “renewables” such as wind and solar have been a critical factor in the grave economic situation today. Wind power for example, now represents 22% of electricity cost, while providing only 5.9% of the power. Worse, that power is produced out-of-phase with demand, as has been detailed by two Auditors General; so much of it is wasted. This is unsustainable.

Clearly, the direction for the Ministry of Energy is to formulate a new Long-Term Energy Plan that will take immediate action on reducing electricity costs. Those actions must include a review of all contractual obligations for power generation from wind, and action to mitigate further costs to the system, and the over-burdened people of Ontario.

## Key Recommendations

- **Reduce costs by canceling contracts** for wind turbine projects. The supply of power in Ontario is “robust” and additional capacity is not required. The action affects LRP I and II, FIT 5.0 and projects without a Notice to Proceed.
- **Reduce costs by reviewing contracts** for operating projects being paid excessive rates. Assess potential to buy out all contracts to eliminate cost over the medium term, while achieving immediate savings by eliminating the need to dispose of surplus electricity.
- **Reduce costs by removing non-electricity costs** from consumer charges, ending ineffective conservation programs and funding for speculative innovation.
- **Reduce costs by reassessing delivery costs** and improving customer service.
- **Reduce costs through improved procurement processes.**

## A. OVERVIEW

The following document was prepared by Wind Concerns Ontario in response to the request for input into proposed changes to the Long-Term Energy Plan (EBR #012-8840). Wind Concerns Ontario (WCO) is a coalition with paid membership of 20 community groups and hundreds of individual members and families across Ontario concerned about the impact of wind turbine projects on their communities. This grassroots network across the province provides WCO with a unique perspective on the outcomes of the current Long-Term Energy Plan both in terms of the effects wind turbine projects are having on local communities, and the impact of resulting escalating electricity costs on low income people and seniors.

## B. ANALYSIS OF SITUATION

### 1. Recent Government Direction

Recent statements from senior government officials provide clear direction for the government's energy policy priorities.

**Minister of Energy Glenn Thibeault** – In late September 2016, the Minister of Energy's announcement of the suspension of the Large Renewable Procurement Process was based on advice from the IESO that Ontario will benefit from a robust supply of electricity over the coming decade to meet projected demand. At that time, he pledged to "take a prudent look at every policy decision that has been made and determine if there is work we can do to reduce costs to Ontarians."

**Premier Kathleen Wynne** – On November 19, Premier Wynne stated that the "government made a mistake" by allowing rates to soar. "People have told me that they've had to choose between paying their electricity bill and buying food or paying the rent. That is unacceptable to me." She went on to take responsibility as Premier for not paying close enough attention to some of the daily stresses in Ontarians' lives and pledged that the government "is going to find more ways to lower rates and reduce the burden on consumers".

**Empire Club Speech** - On November 28, Minister of Energy expanded on these concerns in a speech to the Empire Club. He acknowledged the way the electricity system has been run — with the government arbitrarily mandating how much of the supply must be from nuclear, natural gas, wind, solar and other sources — has led to "uncompetitive prices." He also admitted that signing 20-year contracts for renewable energy projects that specified a generation technology was "arbitrary, and led to sub-optimal siting and heightened community concern."

In this speech, the Minister proposed a new approach for the government in procuring electricity, getting the best deals on whatever sources of clean power are cheapest by calling for bids when more supply is needed. He wants the process used to source new electricity capacity to be "technology agnostic," and focus more on the outcome than on the way the power would

be generated. He issued a challenge to the industry to rethink how the province's electricity system works and find innovative ways to trim costs for people struggling with hydro prices.

These recent policy directions from two senior government officials suggest that policies implemented under the last Long-Term Energy Plan failed to deliver the required results for the residents of Ontario. Now, a complete rethink of the process and a focus on different priorities is required.

The formal discussion document created to guide the Long-Term Energy Plan discussions is no longer consistent with this current policy direction. For this reason, the following input into the Long-Term Energy Plan process takes most of its direction from the recent comments from these officials.

## 2. Impact of the Current Energy Plan on Ontario

Before admitting that it has been a mistake, the government claimed a number of benefits from the charges made under this plan arguing that the increased charges for electricity were a planned investment. These stated benefits include:

- *The investment in wind turbines allowed coal plants to be closed.* **Fact:** the Asthma Society this year presented a certificate to Bruce Nuclear in Kincardine recognizing the role of the refurbished nuclear facilities in allowing this change to be implemented.
- *The investment in renewable energy technology creates jobs.* **Fact:** Most jobs created are lower-skill, short-term construction jobs. In the 2011 report, Ontario's Auditor General warned that studies in other jurisdictions which showed two to four jobs were lost due to increased electricity costs for every job created.
- *Surplus electricity is being sold to other jurisdictions at a profit.* **Fact:** the IESO's reporting shows that the revenue recovered is below the rates provided for in the wind turbine contracts. Neighbouring jurisdictions are now promoting their lower electricity rates to lure Ontario businesses to relocate.

Continued use of misleading information in public pronouncements and media interviews does not contribute to the type of discussions that will lead to resolution of the major issues related to energy policy in Ontario. Finding a better solution to these issues is priority: every day there are more reports of how the escalation in energy prices that has resulted from the current plan is hurting individual and business users of electricity.

**Food Bank Usage and drain on social services** – The Ontario Association of Food Banks issued a report outlining their perspective from the front lines of poverty in Ontario. They report that the rapidly rising cost of hydro is a special concern for low-income Ontarians, noting that rates have risen over 100% in the past 10 years and "show no sign of relief." They report that hydro rates have increased at 3.5 times the rate of inflation for peak periods and 8 times for off-peak periods. The result was 60,000 homes being disconnected last year for non-payment of bills, and extensive media coverage.

The Food Banks say relief provided for low income families is a “drop in the bucket.” The programs are not accessible for many families that need assistance and the \$30 to \$50 per month is not sufficient to ease the burden on struggling families. The \$130 annual HST rebate proposed to start in January is similarly seen as inadequate to help families with a \$300 to \$700 monthly hydro bill.

Social service agencies are also under strain: earlier in 2016, the executive director of a major branch of the United Way said that Ontario’s electricity bills were the direct cause for more than 70% of the aid provided to clients. The executive director said this situation was worsening and could not continue.

**Seniors** – Successive and ongoing price increases in electricity bills are placing a burden on Ontario seniors. National citizens’ group the Canadian Association of Retired Persons (CARP), which represents the interests of seniors in Canada, is focusing on the situation in Ontario where continuing increases have affected fixed-income seniors who own their own homes — their bills go up, yet they have no extra income. While the 8% reduction on HST is a start, Ontario seniors are still dealing with the problem of continual increases that are too high for many to afford. Announced programs like the Low-Income Assistance Program do not address the root cause of the problem as Ontario’s electricity rates will continue to be among the highest in North America. CARP called for an immediate roll-back of hydro costs, and launched a social media campaign.

**Business Impact** – At one time, low-cost energy was a powerful platform that allowed the Ontario economy to develop a strong employment base. This important strategic advantage disappeared with the Green Energy Act. The Ontario Chamber of Commerce reports that the health of key Ontario sectors like manufacturing and automotive are highly dependent on competitive electricity rates. Similarly, the Ontario Federation of Agriculture states that modern farms rely heavily on electricity. The Federation is concerned that increasing energy costs are making Ontario farms uncompetitive. The Canadian Federation of Independent Business also complains that Ontario’s hydro rates are out of control with Ontario’s energy costs already the highest in the country.

The Global Adjustment charges that are applied to business and farm bills are a specific concern as these charges fluctuate widely each month making it impossible to predict monthly costs related to a business. The whole business community is concerned that high electricity costs are forcing them to cut positions and work hours, reduce business investments and slow down future hiring.

Electricity costs in this province have moved from being a job creator to a job killer.

These concerns reinforce the need for immediate action on reducing electricity costs. The Long-Term Energy Plan needs to focus on steps that will not only halt increases in electricity costs, but also include measures to roll back the price escalations that have taken place over the past few years.

### 3. Wind as a Source of Electricity in Ontario

Questions have been raised about the effectiveness of industrial-scale wind turbines as a source of electricity generation for Ontario. The wind resource is intermittent, unpredictable and rapidly fluctuating, meaning wind power requires a source of back-up power that can be activated quickly. Turbines can only be expected to generate output at about 30% of the turbines' nameplate capacity over the course of a year.

The issue is most apparent in periods when wind is at its peak, as they generally coincide with periods when the demand for electricity is lower. Winds are generally low on the hottest days of summer when demand for electricity to run air conditioning is at its peak. Conversely, wind power is produced in spring and fall when demand is low. The same situation is evident on the daily cycle when wind is highest in the evening and overnight while demand for electricity peaks during the day.

The Strategic Policy Economics December 2016 assessment provides data that confirm the extent of this mismatch. The report indicates that "over 70% of wind generation does not benefit Ontario's supply capability".<sup>1</sup> The report notes that when wind generation is present in Ontario, it causes three distinct reactions of similar magnitude: curtailment (waste) of both nuclear and hydro, export of wind generated electricity at prices well below the cost of production, and reduction of natural gas-fired generation.<sup>2</sup>

Ontario's learning about the capabilities of wind turbines from the past 10 years needs to be reflected in the Long-Term Energy Plan going forward. Some groups continue to promote a generation system that is based on 100% renewables — this is not practical. Ontario has learned the difficult and costly lessons about the problems with integrating the intermittent output from wind turbines into the electrical grid. Beyond this consideration, wind turbines have also created major problems in the host communities that Ontario still needs to address if they continue in operation. Past mistakes cannot be repeated going forward, meaning that wind turbines should have no role in long-term capacity plans for the Ontario electrical system.

### 4. Causes of Increased Electricity Costs

Most observers agree with the Energy Minister that the approaches used to increase the level of renewable generation capacity have been the core contributor to the rapid escalation in electricity rates. There are three contributing factors.

- **Premium Pricing** – The Auditor General reported that under the existing Feed In Tariff (FIT) contracts, Ontario power consumers will pay a premium of \$9.2 billion for renewable power with wind power pricing that is double the prices paid in other jurisdictions. An assessment of the situation in the first six months of 2016 provides a current example of how wind turbines are affecting electricity costs. As of June 30, 2016, Ontario had 3,823 MW grid-connected wind turbines and 515 MW distributor-connected. The Ontario Energy Reports for the first two

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<sup>1</sup> Strategic Policy Economics, Ontario's Emissions and the Long Term Energy Plan, Part 2 – Meeting the Challenge, December, 2016, page 20.

<sup>2</sup> Ibid, page 21.

quarters of 2016 indicate that wind turbines contributed 4.6 terawatts (TWh) of power, which represented 5.9% of Ontario's consumption of 69.3 TWh. The average contract cost is estimated at 13.3 cents/kWh or a cost of \$611.8 million for the first 6 months of 2016.

- **First to the Grid Rights** – The right granted to wind power operators to have first access to the grid adds substantially to this already high cost. Much of the wind power output is not required, which means the IESO needs to pay generators to curtail their production or undertake costly measures to dispose of power generated. The cost of curtailed wind is estimated at \$120 per/MWh; energy analyst Scott Luft estimates curtailed wind in the first six months of 2016 totalled 1.228 TWh, meaning that the cost of curtailed wind power generation in the first six months of 2016 was \$4,147.4 million. This payment, plus the \$611.8 million for grid-delivered production, means that a total of \$759.2 million was added to Global Adjustment (GA) costs for the first six months of this year. Those two costs on their own indicate the cost per kWh for wind was 16.5 cents/kWh (3.2 cents about the contract average of 13.3 cents/kWh). These costs also represent 12% of the GA costs (\$6.3 billion) for the six months, about twice the 5.9% share of the power contributed by wind turbines.

In addition, wind turbines need gas plant backup, so those costs must be considered as well. Those costs (due to the peaking abilities of gas plants) currently are approximately \$160/MWh (at 20% of capacity utilization) meaning payments to idling plants for the 4.6 TWh backup was about \$662 million. That brings the overall cost of the wind power contribution to the GA to about \$1.421 billion, for a per kWh rate of 30.9 cents. If you add in costs of spilled or wasted hydro power to make way for wind (3.4 TWh in the first six months) and steamed off nuclear generation at Bruce Power (unknown and unreported), the cost per/kWh would be higher still.

Effectively, for the first six months of 2016 the \$1.421 billion in costs to deliver 4.6 TWh of wind-generated power represented **22.5% of the total GA** costs of \$6.3 billion but delivered **only 5.9% of the power**. Each of the kWh delivered by IWT, at a cost of 30.9 cents/kWh was 2.8 times the average cost set by the OEB and billed to the ratepayer. As more wind turbines are added to the grid (i.e., the LRP I contracts signed in April 2016), the costs described here will grow and be billed to Ontario's consumers.

This analysis of the full cost of wind power contracts contradicts statements being made that wind is the new low cost source of electricity for the province. The Large Renewable Procurement I process may have generated bid prices that average 8.59 cents per kWh; however, this pricing does not reflect the full cost of integrating intermittent wind generation facilities into the grid, estimated at 30.9 cents.

If there is to be effective reduction of electricity costs, the IESO needs to be given directives to develop a program to seriously address contracts that generate such a substantive cost for such limited useful output. The ratio of 5.9% of the power for 22.5% of the costs is not sustainable.

- **Solar Power** – A review of the costs related to the electricity generated by solar panels reveals a situation that is even worse than for wind power. Solar power accounts 13% of the GA costs but only 1.9% of the power.
- **Transmission Upgrades** – Urban communities have demonstrated strong opposition to siting major electrical generating capacity in their communities. As a result, generating facilities including natural gas facilities as well as wind turbine projects are located some distance away. This location strategy required substantial expansion of the transmission grid capacity to support the movement of electricity generated in rural areas into the Greater Toronto Area where the electricity is required.

According to filings with the Ontario Energy Board, transmission upgrade projects driven by renewable energy projects constituted a major portion of Hydro One’s transmission development capital work program in period between 2010 – 2014 and this will continue over the longer term, 2015 – 2020. Hydro One expected to spend \$2.5B in the 2010 – 2014 timeframe and an additional \$4.5B in the period for 2015 – 2020 on these investments. Connecting the rural locations targeted for these projects with centres of electricity demand in urban centres formed the core driver of these upgrades.

As these transmission grid upgrades were largely driven by decisions made in the GTA and other urban centres to block locating power generation facilities, it would seem appropriate that the bulk of this cost should be applied to these urban centres. Spreading them across all Ontario electricity users penalizes rural Ontario twice.

## C. RECOMMENDED SOLUTIONS

### 1. Reduce Costs by Canceling Non-Producing Contracts

As the Energy Minister indicates that Ontario has a “robust” supply of electrical power “for the years ahead,” a situation expected to last for at least 10 years. More capacity may be required after that time, but for now, the current surplus provides an opportunity take steps to manage electricity costs. Given that intermittent output from wind turbines has proven to be a costly source of power, the present contracts do not need to be renewed after the current planning horizon.

The first step in reducing costs should focus on ending contracts that will add to the growing surplus of generation capacity, increasing the costs of surplus power. Continuing with these contracts will commit Ontario to purchase more power that it does not need meaning that it will need to dispose of it at below market rates or increase payments for curtailment of this capacity. Both of these options, conflict with the primary objective of reducing the cost of electricity.

Identified below are some immediate opportunities.

- **Cancel the Large Renewable Procurement II** – This procurement initiative was “suspended” pending evaluation in the context of the LTEP. As surplus capacity has been confirmed and the government’s focus is on cost reduction, LRPII should be permanently cancelled.

- **Cancel the contracts awarded in 2016 for wind power projects under the LRP I** – Under the contracts signed for these LRP I projects, the IESO has rights in Section 9.6 (j) to terminate the contract before it is notified that “Key Development Milestones” have been met. The Pre-Construction Liability Limits outlined in Exhibit B of the contract set a maximum cost in this circumstance. These projects illustrate the Minister’s statements about heightened community concerns and sub-optimal siting. The Minister has received various petitions in the Legislature urging the cancellation of these contracts, including one presented by Grant Crack, the Liberal MPP for Glengarry-Prescott-Russell. Communities have demonstrated that several of the projects are “sub-optimal” in their siting due to locations on migratory bird pathways, in habitats for endangered bat species, in areas known for unstable soils and where existing turbine projects are linked to problems with residents’ water supply. Action to cancel these contracts should be taken immediately as the recoverable expenses continue to mount as the proponents prepare their applications for Renewable Energy Approvals.
- **Cancel the FIT 5.0 Renewable Procurement Process** – The IESO should exercise its rights under clause 12.3 (f) of the current FIT process rules to cancel the FIT 5.0 procurement process that is currently underway. While the total capacity involved is small, it is not required and the contracts related to this output provide for higher, fixed pricing than was realized under the LRP I process. Based on activity reported at the County of Brant Council, at least one proponent appears to be gaming the system by breaking down a larger wind turbine project, designed for the suspended LRP II process, into a series of 10 separate “community” projects in order to meet the FIT 5.0 process requirements. Contracts awarded under FIT 4.0 in late June 2016 should also be reviewed.
- **Cancel all wind power contracts for projects that are not in commercial operation** – Most of these contracts are close to being, or are, in default of the performance requirements of their contracts either in terms of missing their Commercial Operation Date or exceeding the allowance for “Force Majeure” time. In these situations, the IESO has cancellation options with no liability for costs. Given the need to avoid adding more surplus generation capacity, the IESO should be proactive in enforcing the contracts for these projects. Again, the power is not needed, there are significant documented concerns about danger to the natural environment and human health, and the cost of the 20-year contracts will add significantly to Ontarians’ electricity bills.

## 2. Reduce Costs by Addressing Excessive Rates for Operating Projects

For the government to reduce excessive electricity rates, as stated by the Premier and the Minister of Energy, it must address wind power projects in commercial operation. Under the FIT program, Ontario is committed to paying a substantial premium for limited generation capacity. Two approaches for managing these costs are suggested.

- **Enforce Renewable Energy Approvals** – The number of complaints about excessive noise and vibration being reported with the Ministry of Environment and Climate Change (MOECC) suggest that many wind power projects are operating outside of the terms of their Renewable Energy

Approvals (REA). This signifies a growing environmental health problem, due to citizen exposure to noise emissions from industrial-scale wind turbines. The problem is so widespread that the Huron County Health Unit has begun a public health investigation into wind turbine noise emissions, as is their responsibility under the Health Promotion and Protection Act. It is an international problem: in early December, an Irish court found in favour of residents who were forced from their homes by wind turbine noise. The judgment found that the 500-metre setback used in Ireland did not reflect current scientific understanding and is inadequate to protect residents. The 500-metre setback is not significantly different from the setbacks used in Ontario; the Ontario government has the potential for legal liability here, as well.

There is limited evidence that the MOECC has been effectively enforcing even current regulations. Proponents have 18 months to prove their compliance with the Renewable Energy Approval terms. The testing protocols are unworkable according to acoustics experts; one project in the Kincardine area has been unable to demonstrate compliance even though it has been in operation since late 2010. Municipalities and community groups are stepping up to fill this regulatory gap and are using more up-to-date noise measurement technology than the MOECC field staff who are, for example, using microphones that cannot be used in temperatures below freezing. (Winter time is best to assess wind turbine noise due to the absence of bird and leaf noise that is so problematic for the MOECC during summer months.)

In this situation, the MOECC should be exercising its mandate to supervise operations that may create unsafe conditions in the environment by enforcing compliance with the terms of the REAs. Turbines and/or wind power projects that produce excess noise emissions should be subject to enforcement, just like any other environmental polluter. If a turbine or a project cannot operate within its approval, it should be shut down — permanently. Paying an excessive rate for power and at the same time causing harm to the neighbouring residents should not be tolerated by the government.

Similarly, the impact of wind turbines on endangered birds and bats should be more closely monitored. Many turbine projects exemplify the Minister of Energy's statement about "sub-optimal siting" as they were located without proper respect to important bird migration areas along the Great Lakes. The wind power project located on Wolfe Island in Lake Ontario was identified by a United States bird migration expert in his Environmental Review Tribunal testimony as the second worst turbine project for bird kills in all of North America, due to its position in the path of migrating birds. Recent ERT decisions have found that the killing of *any* Little Brown Bats could trigger extinction of the species.

Reporting requirements for bird and bat kills should be tightened to ensure that immediate follow-up and remedial actions, such as shutting down turbines, are implemented, particularly during peak migration seasons. "Green" technologies should not be allowed to kill sufficient quantities of birds and bats that they threaten wildlife species with extinction.

- **Address Premium Priced Contracts** – In response to the Auditor General’s criticism of the pricing offered, all existing contracts for wind turbine projects should be reviewed in the context of the high cost commitment for intermittent electrical generation. The Strategic Policy Economics plan for meeting long-term requirements of the province’s strategy does not envision replacement of wind turbine capacity when the current contracts expire. Given the cost impact of these contracts on the price of electricity in the interim, a comprehensive review of all these contracts is advisable to identify options for cancellation or buyout.

While there may be a substantial cost of buying out these commitments to purchase high cost electricity, removing this intermittent, and largely surplus, capacity from the system will eliminate the high cost of disposing of the surplus electricity. As shown above, while the contracts contributed electricity at an average cost of 13.3 cents per kWh, the cost of disposing of the surplus electricity generated in the last six months added another 17.6 cents per kWh, or \$809.4 million, for the first six months of 2016. This cost is equivalent to an annual cost of over \$300 for the average electricity user.

In 2016, Ontario has a much clearer understanding of the limited real value of the intermittent electricity generated by wind turbines than was available when the Green Energy Plan was initiated in 2009. While the buyout costs of wind turbine projects may be large, sizeable savings would result even if the net present value of the contract commitments were amortized over the remaining life of the contracts, because the immediate significant cost of dealing with the surplus power also would be eliminated.

### 3. Reduce Costs by Removing Other Non-Electricity Costs from Electricity Charges

The LTEP discussion document indicates that electricity rates and contract rate premiums have been used to support other programs. Diverting the funding of these programs from the electricity rates should provide immediate opportunities for savings.

- **Ontario Electricity Support Program** – Given the demonstrated impact of high electricity rates on seniors and low-income people, this program is needed until meaningful cost savings in electricity rates can be achieved. However, the program should be funded by the Ministry of Community and Social Services which is responsible for other social assistance programs. Including the cost in electricity rates is not appropriate as that approach just increases the rates even further, contributing to the very problem that the program is designed to solve. Consolidating these payments with other social assistance payments should also reduce the cost of program administration as qualification for benefits could be administered by the same process used for other social benefits.
- **Indigenous Programs** – While the need for increased funding to address issues in Indigenous communities is apparent, funding should be provided by the Ministry of Indigenous Relations and Reconciliation, rather than included in electricity costs. The LRP process provided for higher rates for projects proposed with Indigenous participation; similarly, additional points could be

achieved in the bid process by proponents who nominally had Indigenous participation. This process contributed to community “concerns” and rejection of the validity of the RFP process when remote Indigenous community support led to the awarding of a contract for a project that was not supported by the local Indigenous community. Approval of projects to supply electricity for Ontario should not be intermixed with programs to deliver benefits to Indigenous communities.

- **Co-op Program Price Adders** – Community energy co-operatives may provide important channels in addressing government initiatives, but they should not be funded through price adders on electricity that they generate. In too many cases, project promoters are adding the appearance of “community investment” to qualify for these incentives when in reality the community group is largely composed of existing investors in the project.

#### **4. Reduce Costs by Ending Ineffective Conservation Programs**

Ontario also runs a series of programs to reduce electricity consumption funded by electricity revenues. While these programs might make sense in a period where reduction in demand would offset the need for new generation capacity, in a period of surplus capacity they actually contribute to the cost of electricity for remaining users. Reducing demand from one paying customer may solve the problem for that customer (and provide a photo opportunity for the Minister), but it does not address the root cause of the problem — the surplus of capacity in the overall system. In effect, the cost of the saved electricity is not removed from the system; it is merely added to the burden placed on the remaining customers.

In addition, the costs required to support these initiatives are included in the costs charged to the already struggling electricity users. The Minister of Energy has given clear direction that he wants initiatives to reduce electricity costs, but continues to be given opportunities to tour the province promoting solutions that benefit one customer while increasing the cost for everyone else. This disconnect needs to be corrected.

One “conservation” practice that is particularly hard to justify is sending what have become known as “shaming letters” to Ontario households, apparently comparing their power use to a sample of “similar” neighbours. The circumstances in each dwelling are unique, especially in rural Ontario where houses are not homogeneous, so this blind comparison with other people who may have different requirements is not seen as credible. Based on most reports from WCO’s community groups, these letters are seen as the government wasting more money on an ineffective and possibly offensive program, then adding to the insult by charging the cost to our electricity bills.

To have real value, conservation programs need to be focused on initiatives that reduce peak demand. The incentive to municipalities to replace street lights with new LED lights was an example of a questionable initiative: the reduction in power usage achieved by this program affects low, night-time base demand and does not provide a meaningful return on the incentives provided under this program. Managing daytime peak demand should be the focus of conservation programs.

If there are bona fide projects where conservation initiatives are necessary to protect employment by reducing electricity usage, the cost of these initiatives should not be funded by surcharges on electricity costs. Instead, they should be funded by the Ministry of Economic Development and Growth whose role is promoting the economic development of Ontario.

## **5. Reduce Electricity Costs by Removing Funding for Speculative Innovation**

Over the past 10 years, there have been many examples where what had appeared to be bold new initiatives were funded out of electricity costs proved to be costly failures. The \$2 Billion Smart Meter program is a good example. A massive program to replace all hydro meters in Ontario was initiated without confirmation that the technology would work in all communities or minimal testing of the potential to actually change behaviour and thereby affect capacity. The result of this costly experiment was chaos in the Hydro One billing system when the technology proved incapable of actually generating even basic usage information over a series of months leading to a sequence of estimated bills that frequency bore no resemblance to actual usage.

Even where the meters worked, homeowners quickly found that there was little they could do to move meaningful amounts of electricity out of peak demand periods. Core household appliances such as refrigerators need to operate for the full 24-hour period, irrespective of the consumer's desire to reduce usage and take advantage of the limited opportunity for savings. Similarly, farm operations and business cannot shift electricity consumption to non-peak periods without complete disruption of their production process. For example, dairy cattle are milked throughout the day and milk must be immediately cooled no matter what the cost of the electricity. Similarly, chicken barns needed to be cooled during the heat of the day by operating large fans, or heaters in winter, or the flocks would die.

The Auditor General labelled the program a complete failure in terms of reducing electricity in peak demand periods. The government responded to this situation by increasing the off-peak rate eight-fold in recent years, reducing any incentive that there was to shift consumption.

As it was written before the recent government direction, the discussion paper supporting this LTEP contains more bright ideas which suggests that the initial approach to energy planning was to continue with ideologically driven proposals, whether or not they are supported by science. Storage is a great concept but even influential and informed people like Bill Gates have stated that it will only make a small targeted impact on energy consumption for the foreseeable future as storage capabilities on the scale required to address issues in Ontario are not going to be available. Investments in this long-term research should not be supported by funds from electricity rates. They should come from the industry and/or the proponents of generation schemes. If a wind power project needs to develop large scale storage capabilities to make their technology a dependable source of electricity, the wind industry should be responsible for developing the technology and its implementation should be covered under the costs that the sale price of their output, not funded by general ratepayers.

Smart Grids are the next generation development of Smart Meters. Rather than engaging in speculative ventures, the Long-Term Energy Plan should focus on its core responsibilities of ensuring the basic grid is

capable of supporting the current requirements for a wide base of users. This is particularly evident in rural farm communities where the grid design dates back to the late 1940s and early 1950s, a period when the energy demand in these areas was very limited. This has changed radically as modern farming practices added more and more electronic equipment to support agricultural production. Changes to the grid capacity have not kept pace with stray voltage caused by inadequate neutral line capacity being a problem in many rural communities. When renewable energy facilities are layered on top of this already inadequate grid, the problems expanded with the addition of dirty electricity that is costing farm operators substantial sums to counteract and provide protection for the sensitive electronic equipment necessary to their operations.

Notably absent from the LTEP discussion guide was mention of two proven alternate fuel sources: lake-water cooling and geothermal energy. While claiming a mandate to cover fuel sources other than electricity, the discussion was only expanded to cover natural gas and oil. Lake-water cooling is a proven technology that substantially reduces carbon emissions from cooling the large office towers in Toronto. Would it not have been appropriate to raise the role of this technology in other cities that border Lakes Ontario, Huron and Superior?

Similarly, geothermal solutions are proven approaches to heating and cooling buildings in rural communities where the larger land areas needed to obtain horizontal cooling capacity are available. This proven technology could be a more productive as an alternate fuel source than the wind turbines and solar panels that are being rejected as a high-impact, low-benefit form of power generation by most of rural Ontario.

## **6. Reduce Delivery Costs**

Escalating undefined "delivery" charges on consumer bills is a flash point of consumer concern with the billing process for electricity, and is garnering media attention. Delivery costs are a major component of the overall charges and in many cases overwhelm the charges for the actual electricity. Reducing these charges and ensuring their proper allocation needs to be a major focus going forward.

Many officials blame the high delivery charges outside of urban centres on the larger distances between customers. This of course ignores the close distances between homes in many communities and the very high demand for electricity from many farm and other rural operations. In reality, these higher costs could only apply to remote communities. This suggests a full review of method of determining delivery charges should be undertaken.

**Line Losses** – The limited generating capacity in urban centres also means that there is substantial line loss associated with the transmission of the electricity produced in rural areas to support urban requirements. Rather than averaging these costs across the province, they should be focused on the urban centres where the power is consumed but not produced. Going forward, line loss costs should be considered in siting generating capacity so that local generating capabilities provides a strategic cost advantage to the host community. The current process allows large centres to avoid an electrical

generation requirement which means generation is then forced on rural communities without any meaningful consideration of community views.

## **7. Reduce Costs through Improved Customer Service**

Many WCO members and member community groups were concerned about a recent consumer survey undertaken by Hydro One; it seemed designed to support an application to the Ontario Energy Board for an approval for increased delivery expenses. The survey also seemed to be based on the false premise that increased spending to fix customer service issues would not reduce the cost of call centre operations, and additional investment in proactive line maintenance would not result in reduced outage response costs. Spending could be reallocated between the pairs of expense categories but suggesting that spending in one area would reduce other spending was not an option.

This survey did not seem based on the learnings from other companies with broad experience with reducing expenses through improved customer service. Hydro One has a range of customer service issues and there is no doubt that these are showing up in the delivery costs passed on to customers. The outsourced call centre has been particularly ineffective in addressing issues raised by customers. Hydro One staff have actually been reported as recommending that unresolved complaints be directed to MPP offices which have access to a special complaint resolution process outside of the call centre. This is wasteful: the call centre should have the responsibility for resolving complaints.

As part of the LTEP's focus on cost reduction, Hydro One should be assigned targets to identify and eliminate major customer irritants with a view to achieving an immediate reduction of customer service costs that are applied to delivery charges applied to customer bills. Similarly, spending on line maintenance should be increased to allow more proactive spending that will reduce the incidence of dead trees and branches disrupting service in rural areas. The focus should be on fixing the customer service and availability problems to reduce follow-up costs, not passing on the existing costs.

## **8. Reduce Costs through Improved Procurement Processes**

As the Minister of Energy has indicated, the previous energy plan erred by directing the procurement process to select specific technologies, essentially picking the winners and losers. He indicated that the future procurement processes need to be "technology-agnostic" with the selection being based on price only. Based on the experience over the past 10 years, this approach can be supported. Implementation will require some important considerations.

- **Eliminate First to Grid** – No supplier or technology can be granted first to the grid access rights as providing this access to some technologies has created the large surplus of electricity supply that has led to rapid escalation in costs.
- **Base Evaluation on Full Costs** – The proponents for the wind industry are arguing that the cost of wind generation is now equal or lower than nuclear generation. This position ignores the intermittent nature of the wind resource and assumes that they can sell their product at any time wind is blowing whether the output is needed or not. It effectively ignores the significant costs of disposing of surplus electricity forced onto the grid. It also ignores the transmission grid

inefficiencies and the line losses involved in transmitting moving the power from its generation location in rural Ontario to the urban centres where it is required.

**Agnostic to Suppliers** – Just as the system should not favour technologies, it also needs to be agnostic to supplier. The process cannot accept electricity from net metering applications when it is not required to meet demand any more than the grid would accept it from a specific technology. All have to compete on the same level playing field. Similarly a net metering application that only wants to buy electricity from the grid on an intermittent basis and/or only in peak demand periods should be charged for the type of premium demand it is generating.

- **Include Cost of Grid Access** – Potential electricity suppliers should be assessed the costs of upgrading the grid to allow their project to connect to the grid. Including these specialized project costs in the general delivery charges have caused electricity to be priced outside of the boundaries that the market will absorb.
- **Include Storage Costs** – Any costs related to electricity storage should be borne by the generator if storage capacity is needed to make its output cost-competitive. Electricity users with capabilities to store surplus power in low demand periods at night and release it to the grid in peak daytime periods should be rewarded.
- **Demand Management** – The same basic principles should be applied to managing the demand side. The current approach to rewarding households that allow their air conditioning systems to be adjusted to reduce consumption in peak periods is a positive approach. Users/usage that will trigger sizeable upgrades to grid capacity to support their requirements, i.e., home charging stations for electric cars where sufficient grid capacity does not exist, should be assessed the cost for the upgrades.

This approach to evaluating interactions with potential participants in the energy process will go a long way from the current process where ideology, rather than science or economics seems to dominate decisions. The process should favour dispatchable sources of electricity generation and those that are located close to urban users reflecting the true economics of these decisions.

## 9. Engage in Effective Regional Planning

The process used for Regional Energy Planning should be more open and transparent. The confusion in the current process is illustrated by the statement in the LTEP discussion document that planning has been begun or completed in all 21 Regions. At the same time, the IESO website currently indicates that 7 of the 21 Regions included in a group that is “scheduled for future planning activities.” Even where planning is underway, the boundaries of the planning areas are not clear. To align with other provincial and municipal planning activities, these boundaries should match municipal boundaries. The IESO maps provided to support the current process do not show municipal boundaries and their written descriptions do not align to their maps. Municipalities have been mandated to create energy plans and these should be integrated with Regional plans for effectiveness and sustainability.

At the same time, the plans completed for areas within the GTA region under this planning process seems to be proceeding without a requirement to include local generation capabilities to replace the

coal plants that have been closed or the gas plants that were to replace them. They seem to assume that additional supply will come from outside of the planning area, i.e., rural Ontario, when it is needed in the future.

Currently there is an almost complete disconnect between energy planning and municipal planning activities of all types. As noted by the Minister of Energy, this situation has resulted in poorly sited generation projects. Municipalities are in a stronger position to identify the energy generation capabilities that are most appropriate for their communities. Currently electricity generation plants are imposed on rural Ontario municipalities with no effective channel for municipal or community input. The result has been widespread local resistance to provincial energy policy. At total of 116 municipalities, or more than 25% of all municipalities in Ontario, have passed resolutions calling for “municipal support resolutions” to be *mandatory* for the approval of any new renewable energy contract. Without local support, the projects face strong local opposition that is becoming more effective in delaying or preventing the construction of approved projects.

New generation projects planned for rural areas also should also be subjected to basic cost/benefit analysis that includes consideration of the full impact of the project on its host community. This would include the impact of the project on the wider economy within the host community, the impact on land values in the immediate area of the project, and a process to address neighbouring residents who report health issues related to operation of the project. In addition to being questionable contributors to the electricity needs at the provincial level, operating wind turbine projects are also causing problems for the people who must live inside the projects (without consent), and affecting the wider economic activity in the host community. These concerns are not properly reflected in the current evaluation for the projects.

Community groups have demonstrated that they have access to the full range of technical expertise that is available (often on a volunteer basis) to identify issues related to the environment and health not addressed in the current approval process. Communities also seem able to raise the substantial financial resources needed to challenge projects before tribunals and in the courts. It would be better to address the process issues that are causing what the Minister of Energy has labelled as “sub-optimal siting” decisions before the formal approval is granted.

#### **D. CLARIFY RELATIONSHIP TO CARBON REDUCTION OBJECTIVES**

The future LTEP needs to be demonstrably linked to Ontario’s aggressive program to reduce carbon emissions. The high price for electricity seems to be a major barrier to achieving this longer term objective. The demand for electricity in Ontario is demonstrating that the demand for the service is not inelastic. The shift away from using the commodity may be delayed by the time needed to develop a replacement but the sharp declines in demand demonstrate that basic economic theory does apply to Ontario’s electricity sector.

Unfortunately in many cases, the high cost of electricity is driving consumers to employ other fuel sources that are less desirable. In higher density areas, this means the substitution of natural gas for expensive electricity. In rural areas, where natural gas is not available, the burning of wood is increasing as a source of heat for homes. If this practice spreads, the environmental benefits of closing the coal plants will be greatly diminished. These adverse consequences can only be reversed through the aggressive actions to reduce the current cost of electricity.

Many of the current conservation activities are hard to understand in this context as, in many cases, the projects involve substitution of fuel sources that emit more CO<sub>2</sub> than the electricity that they are displacing. Now that coal-fired generation has been removed from Ontario's generation system, electricity requirements are largely being supported by nuclear and hydro generating capacity. The current high cost of electricity is a real barrier to leverage this strategic advantage to displace further CO<sub>2</sub> emissions, but to actually provide incentives to electricity users to move to high carbon fuels seems to contradict the wider government focus on CO<sub>2</sub> reduction.

There is also a perception that the addition of more wind generation capacity to the grid will reduce Ontario's carbon foot print when the opposite is actually true. Once the coal plants were phased out and permanently closed, Ontario already has a low-carbon electrical generation system as it is largely based on nuclear and hydro resources. According to the Ontario Society of Professional Engineers<sup>3</sup>, adding more wind generation capacity to this system will actually increase its carbon emissions and the intermittent nature of wind output forces the addition of more gas plant capacity to quickly fill periods when the wind resource is not available to power the turbines.

To meet the demands of a decarbonized future, Ontario needs an electrical system that is based, not on ideology, but rather on a proper assessment of the potential contributions of cost effective options that can respond to variable demand without reverting to fossil fuel back-up

## **E. CONCLUSION**

Ontario is now in a critical situation where energy policy and lack of comprehensive cost-benefit analysis has resulted in unsustainable electricity rates for ordinary consumers and businesses. This will have far-reaching implications for decades to come if not addressed immediately.

Again, our recommendation is that a renewed Long-Term Energy Plan for Ontario strike a balance between government environment objectives and the need to create and maintain a sustainable, affordable electricity system.

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<sup>3</sup> Ontario Society of Professional Engineers, Ontario's Electrical Dilemma, April 2015, page 15. Presentation available at <https://www.ospe.on.ca/public/documents/presentations>.