



Ontario Federation of Agriculture

Ontario AgriCentre

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December 15, 2016

The Honourable Glenn Thibeault,
Ontario Minister of Energy,
Hearst Block 4th Floor, 900 Bay St,
Toronto, ON
M7A 2E1

Dear Minister,

RE: Ontario Long Term Energy Plan

The Ontario Federation of Agriculture (OFA) is the largest voluntary farm organization in Canada, representing over 36,000 Ontario farm family businesses. These farm businesses form the backbone of our rural communities and our robust food system has the potential to drive the Ontario economy forward.

The agri-food sector is the number one industry in Ontario, generating \$34 billion in GDP and employing 740,000 people. The Premier's challenge - to double our annual growth rate and create 120,000 new jobs by 2020, requires collaboration between government and the agriculture sector and progressive public policy. Ontario's key priority is growing the economy and creating jobs, and OFA believes addressing farm business and rural needs is vital to achieving a successful Ontario Long Term Energy Plan and expanding our economy.

Ontario's LTEP must bring reliable, clean energy options at competitive costs, by engaging rural and remote communities in the design and delivery of local energy systems. The LTEP must focus on Smart Grid efficiency, Distributed Energy Resources (DER) and microgrid generation, to manage distribution and load use.

Considering the IESO Ontario Planning Outlook, and Ontario Energy Future Report, we identified five areas for this LTEP submission; system efficiency & Conservation Demand Management, fuel mix, delivery, innovation, and cost.

System Efficiency and Conservation & Demand Management (CDM)

On the supply side, the province should examine capacity flexibility options with our neighbors to reduce IESO's Reserve Above Requirement margin. For demand, Ontario must focus CDM squarely on peak load reduction instead of broad baseload conservation.

Fuel Supply Mix

Ontario should explore renewable and conventional natural gas options, beyond use as bulk electricity generation fuels. The province can exploit the efficiency, cost, reliability, and low carbon benefits of natural gas for heat and cogeneration at the customer side of the system.

This means all relevant Ministries must advance the expansion of natural gas access in rural and remote communities. Ontario should recognize the interplay and leverage the relationship between the Ministries of Energy, Environment & Climate Change, Natural Resources, Infrastructure, and Agriculture & Rural Affairs to reinvest in a rural energy plan and rural natural gas infrastructure.

Energy Delivery

The LTEP should advance Distributed Energy Resources and community energy projects by designing regulatory processes to support and simplify the economic participation of communities hosting micro grids, community, and DER generation projects. The LTEP must also invest in remote community energy, aligned with investment in northern infrastructure, agriculture, and natural resources.

The current impulse is to shore up projected future deficiencies with bulk OPG generation assets. DERs and community energy systems provide a genuine opportunity for a shift to Smart Grid technology. While Ontario's previous attempt at Smart Grid was, to say the least, a financial failure, we still need to direct a concerted effort to bring grid technology to a tolerable level in Ontario. From broadband access, through to Smart Meters to moderate usage and communication with grid system technicians, Ontario needs improvements in all Smart Grid areas.

Innovation

The simplest innovation for the LTEP to implement is to replace expiring fixed price contract awards with capacity agreements. Most if not all North American jurisdictions use or plan to introduce auctions for generators to bid for capacity. The Ministry and IESO have begun discussing this long-recommended market approach to replace fixed price contract awards. Technology-agnostic competition favours low-cost generation and encourages innovation in green energy. At the very least, this approach promotes competition between green renewable energy technologies.

Collaboration and incentives should also focus on innovative opportunities for DER, micro grids, storage, Smart Grid, net meter systems, and Smart Metering technology.

Cost

Savings from capacity auctions will only show meaningful results as existing price contracts are replaced through attrition. Larger commercial and industrial demand response, and conservation programs for high-use residential customers have reduced some user costs. However, many fixed income, smaller commercial, rural and farm business customers are disproportionately burdened with high energy costs.

Past LTEP signals ushered in Large Renewable Procurements, green energy tariffs and conservation programs. The LTEP should send a signal to review electricity service classes.

Most rural residential and farm customers pay unaffordable delivery charges. The annual Global Adjustment increased by \$5 billion from 2011 to 2015. Annual Global Adjustment will rise by another \$2 billion for 2016.

Cost parity between LDC power and off-grid generation will either result in significant customer withdrawal from traditional LDCs, or lead to a combination of utility DER and community grids. The LTEP must promote economic short and long term solutions outside urban centres, adding generation where we need additional rural capacity and leading rural economic development.

Net metering, and improved net metering options must involve simple processes to encourage power consumers to adopt this technology or we risk customers abandoning the bulk energy system.

Minister, Ontario farmers and our rural communities are highly dependent on a reliable and competitive electrical system. Primary agriculture alone accounts for 85,000 Hydro One metered accounts. We believe an opportunity now exists, via a well designed and executed Long Term Energy Plan to enable our farm sector and rural Ontario to rebuild a thriving economy.

Because of this the OFA is very engaged in the development of the LTEP and look forward to extensive consultations with your and your Ministry to ensure we develop an electricity and energy plan to fully capitalize on rural Ontario's potential.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keith Currie', is displayed on a light gray rectangular background.

Keith Currie
President

Encl.

cc: Andrea Pastori, andrea.pastori@ontario.ca
Cabinet Liaison and Strategic Policy Coordinator, Ministry of Energy

Background

System Efficiency and Conservation & Demand Management (CDM)

Improve contingency options to reduce Reserve Above Requirement margin

IESO assures supply adequacy by setting a Reserve Above Requirement margin to account for nuclear refurbishment delays or variable generator performance and availability. Managing surplus baseload generation effectively and securing much needed market flexibility are needed to plan for contingencies. More capacity trades with Quebec and improved interties with US markets both will help better manage the excessive amount of Ontario's Reserve Above Requirement generation.

Design CDM incentives to reduce on-peak load instead of broad conservation

Class A Industrial Conservation Initiative (ICI) accounts for 55% of Ontario's 1,800 MW demand response capacity, and CDM reduces electricity demand by 13 tWh. However, the bulk of Ontario CDM only addresses the baseload generation. Time-of-use and the problematic Peaksaver PLUS programs accounted for only 12% of 2015 demand response capacity. Ontario must incent innovative peak load reduction. Access to quick response generation, new technology in energy storage, and innovative on-peak demand response will help reduce the magnitude of on-peak variability and improve control of Ontario's Reserve Above Requirement generation.

Fuel Supply Mix

Exploit renewable and natural gas efficiency

The LTEP should expand access to conventional and renewable natural gas. Installed capacity for natural gas generation has a significant place in the electricity system, but the most efficient use of natural gas is at the local level to generate heat, ideally supplemented with power. Cleaner and more reliable than diesel or fuel oil, natural gas brings an uninterrupted fuel option to rural Ontario homes and businesses. Electric vehicles are a clean solution for urban centres right now. Natural gas can provide a clean solution for the rest of Ontario. RNG and piped gas facilities along strategic transport corridors can facilitate retail and commercial natural gas solutions for trucking and commercial fleets.

Invest in natural gas access expansion in rural and remote communities

The Ministry should encourage the timely review of gas utility expansion proposals before the OEB. The OEB's Generic Natural Gas Access Review ruled to permit project specific rate guarantees. This will bring some projects to within financial requirement but the OEB ruling put the burden of aid-to-construction costs squarely on the shoulders of rural municipalities. It is vital to recognize that rural municipalities and small communities do not yet have the industrial or commercial tax base to finance connection without meaningful government support. Rural and small municipalities already struggle to raise sufficient funds to maintain their current stock of infrastructure. Strategic government investments in rural infrastructure, beyond the \$200 million loan and \$30 million grant, and sound policy and program design will facilitate economic growth that benefits all Ontarians.

Advancing access to pipeline natural gas and RNG does not mean abandoning other fuels from rural Ontario. For communities beyond the reach of current pipeline expansion initiatives, geothermal, propane, combined renewables, CHP, compressed and liquid natural gas delivered to reinjection to local grids, will all provide energy solutions for rural and remote communities.

Leverage Ministry of Energy relationships with key development, agriculture and infrastructure stakeholders to reinvest in a rural energy plan and rural infrastructure

A portion of the proceeds from the sale of Hydro One Networks Inc. (HONI) shares must be invested back to rural Ontario. One half of HONI share value is comprised of distribution assets located throughout rural Ontario. While transmission assets are funded by all Ontarians, small town and rural Ontario customers have borne the financial brunt to build and maintain HONI distribution assets for generations. Directing some of the proceeds from the Hydro One public share offering to a Rural Ontario Natural Gas program, is a sound investment in rural economic development, it is also a calculated use of some of those proceeds to the communities that financed the Hydro One network. The LTEP should include plans for a Rural Ontario Natural Gas program investing up to \$75M annually for twenty years to support community aid-to-construction costs.

This investment in rural infrastructure is essential to growth and adding rural and remote attachments will begin to pay dividends right away. The immediate fuel costs savings in rural agriculture-based communities will be reinvested in rural economies. And, with a healthier agri-food sector base, these reinvestments will further multiply through food processing, transportation, and innovative investment in cleaner power options for rural Ontario.

Businesses can factor high costs for electricity and trucked fuel into decisions on facility location. However, no business can factor in the cost of service interruption. Businesses must have access to reliably supplied energy options. In every corner of rural and remote Ontario, winter road closures due to poor visibility are common occurrences. With access to an uninterrupted fuel source, the agri-food sector will make investments necessary to expand production in rural Ontario.

Over the mid and long term, these rural investments will reduce constraints on urban infrastructure, including transmission and distribution assets, and extend the life and capacity limit of existing urban infrastructure. Locating newly enabled processing, commercial and manufacturing facilities in rural centres allows people to live closer to work, reduces commutes, enlarges municipal tax base, and enables innovations in rural transportation and local power generation. Ministry direction on rural, resource, infrastructure and environmental factors need to be unified.

Energy Delivery

Advance Distributed Energy Resources (DER) and community energy hubs

Capacity and capacity restraints must be addressed as part of mid and long term planning. Vast areas of Ontario with the ability to feed in generation are now prohibited because of our aging and limited transmission capacity. This led to suspending contract renewal negotiations for existing generation while campaigning for new large procurements in other areas. While the Ontario electricity system is in a surplus generation position, the LTEP should plan for DER.

LDCs in and around the GTA project lower demand, even with new construction. Price parity has brought in net metering, and conservation campaigns continue to reduce demand. For LDCs operating outside urban centres, DER can provide a new business line, help address capacity restraints, and encourage new commercial, industrial and residential development.

DER strategically sited to surround the larger Greater Golden Horseshoe, where feedstocks are located and generation is needed, will facilitate rural and community development. Decommissioned assets at Nanticoke and Lambton should be part of LTEP plans to use existing infrastructure once load profiles begin to overtake generation. An unbiased technology approach to capacity agreements for recommissioned assets and DER will keep costs aligned with market prices. DER will provide an opportunity for local LDCs to participate in a new system instead of abandoning small rural communities to assume complete departure from the system grid.

Support communities hosting Industrial, community and DER projects

The Green Energy Act manages the degree of local government influence in decisions to approve industrial-scaled renewable generation. This ensures local preferences do not undermine green energy procurements. LTEP should plan for the eventuality when load surpasses generation. The next iteration of industrial-scaled renewable procurements should be a combination of DER and community energy hubs. Local government should have a stronger voice to ensure installations are sited at mutually agreeable locations and specifically, not sited on farmed land. As future procurement programs are rolled out, they must be designed to encourage significantly more community ownership options, engagement and collaboration between generators, land owners and local community governments.

The LTEP should design a regulatory process to assist communities, residents and businesses to adopt net metering and micro grid solutions. Small scale generation and storage systems will enhance the existing power grid and in many cases, provide alternative generation sited where load is located. Community based and community owned storage and generation will contribute to reducing peak demand without constraining urban capacity. This extends the life of existing infrastructure thereby reducing the amount of Global Adjustment all customers pay.

With access to pipeline natural gas, DERs including combined heat power (CHP), micro-CHP, fuel cells, and reciprocating motors, will compliment hybrid solar and wind power systems, microturbines, rooftop solar PV, small wind power systems, geothermal systems and a combination of these systems to bring generation to rural Ontario loads. For example, CHP with photovoltaic and battery systems can provide full electric power for homes without prohibitive storage expenses. In remote areas, rooftop solar and battery systems can run geothermal pumps in the summer when electricity is more expensive, and LDC power during the winter.

Invest in remote community energy, aligned with investment in northern infrastructure

The Ministry acted on the 2013 LTEP to begin grid-connection for 21 of 25 Hydro One Remote First Nation Communities and help reduce their reliance on local diesel generators. High costs for diesel and air transport, diesel generation impacts on environment and quality of life (noise, exhaust, risk of spill, service outages), have made transmission connection viable. (IESO - Electricity Planning in Northwest Ontario NOMA April 29, 2016)

These initiatives benefit all Ontarians and we must continue to improve remote capacity

Remaining communities not feasible for grid connection should be candidates for innovative pilots to explore clean local community generation. LTEP should incent these pilots as northern capacity

solutions without encouraging specific technology. Additional to electricity, LTEP should incent natural gas connection at key northern transmission pipeline intervals. Reliably supplied natural gas, CHP, biogas and biofuel fed from local forestry by-products, geothermal and other renewables can help maintain and grow indigenous communities.

Northern and remote capacity and independence presents a real opportunity to pilot community owned and maintained energy hub systems. Using generated heat to support small local greenhouse development can also provide fresh produce priced well below the cost to fly processed food into these communities.

Innovation

Develop capacity agreements instead of fuel/technology specific price contracts

OFA agreed with the decision to suspend LRP and Waste to Fuel programs. As currently designed they hinder the ability for the Ontario market to remain flexible. Moving away from longer term fixed price contracts to market priced capacity agreements will reduce Global Adjustment and will foster innovative, efficient and economic options able to compete for capacity.

Ontario is in a surplus electricity supply position for the next six to eight years under all four IESO outlook scenarios. As long-term fixed price contracts for specific types of generation expire, Ontario will begin to cross into an energy deficit around 2023. For now, the surplus brings the opportunity to transition to capacity agreements.

Guaranteed market access will still provide enough assurance to attract new and renegotiated contracts, encourage innovation and stifle existing resources that cannot compete in an open market. The transition from price guarantees to capacity agreements will eventually narrow the gap covered by Global Adjustment. With a smaller per cent of usage costs going to Global Adjustment, customers are re-motivated to innovate and participate in CDM.

Expand inter-jurisdictional Capacity Trade agreements

Ontario's surplus electricity position also provided a good position to enter a Capacity Trade Agreement with Quebec. Swapping high cost capacity during each province's different peak season is a simple and effective way to address on-peak load issues. As intertie and capacity constraints allow, Ontario should increase capacity trades.

Advance opportunities for innovative distribution generation, micro grid systems

LTEP should encourage integrated community energy planning and avoid the risk of stranded assets and resulting high electricity rates. High costs, reliability and extreme weather events will continue to drive local communities to explore and develop local energy to meet local demands. As energy hubs and micro-grids become more prevalent, centralized generation and distribution will be regarded as supplementary. The transition risks stranding assets in the bulk system. As with LDCs transitioning to DER, planning should support smaller rural communities to explore modular systems based on locally sourced, owned, and operated resources.

Advance opportunities for reliability, Smart Grid and Smart Meter technology

Rural Ontario shouldered significant costs to establish Ontario's electricity distribution system. However, all rate payers now need to see mid and long term government commitment to rural system improvements; low voltage issues, brownouts, and uncontrolled electricity are normal

occurrences in rural communities that are not considered acceptable in urban areas. The LTEP must enable IESO and LDCs to reduce occurrences with longer term planning solutions and reasonable funding to address rural network safety and reliability issues.

Utilities with multi-transformers and multiple distribution line paths maintain assets on a component basis with little to no service interruption. This efficient and economic process also results in a robust database of component and asset condition and life cycle. Because of the rural, thinly populated nature of rural grids, Hydro One asset management involves frequent scheduled service interruptions to upgrade rural assets at single transformer unit stations with single terminal distribution lines. During Hydro One scheduled service interruptions, this involves replacing as many components as are reasonably recommended, including some components not yet at end of life. This inefficient and costly process could be improved if LTEP signalled that rural utilities adopt longer term strategies for upkeep and new build proposals to consider a smarter grid with improved asset management potential. An additional benefit would be improved safety, quality and reliability to the rural network.

Cost, Pricing

Review electricity service classes

Recently, the government announced a lower threshold peak demand for participation in the ICI program. This will allow additional commercial/industrial electricity customers to become Class A customers and participate in demand response to significantly reduce their peak power requirements and lower their Global Adjustment. Beyond a few additional greenhouses and very large livestock operations able to invest in cogeneration equipment, the lowered threshold does little for the broader farming community. This leaves much of the rural agriculture sector to cope with prohibitively expensive electricity costs.

Many mid-sized farm operations with a high peak electricity demand could benefit from demand response but only if they curtailed grid demand with cogeneration fuelled with biogas or natural gas. Just as signals from previous LTEP ushered in CDM and green energy programs, this LTEP should signal a review of customer service classes and provide provincial support towards a farm sector electricity class and sector based solutions.

Whereas peak rates, particularly time-of-use rates, are meant to incent CDM behaviour, farms with livestock barns cannot simply curtailing draw during a system peak summer heat wave, or switch to non-peak times to run their operations. Ontario's high on-peak rates, Global Adjustment, and rural line delivery costs are important factors when considering farm business expansion decisions.

Load profiles vary greatly by farm size and type. Farm businesses without the flexibility to curtail peak consumption are not appropriate customers for time-of-use billing. And, farms using a continuous baseline energy load can be regarded as an asset for grid management. Operations that adhere to a high degree of CDM, geared to farm type and size, should be eligible for a farm sector electricity rate class, identified by an operator's Farm Business Registration number. A competitively priced agricultural-specific rate class for all farm types and size, will allow farms to better manage one of their most expensive inputs – energy costs. The resulting economic payback by sustaining farming in Ontario is immediate and continual.

Table 1 - Hydro One Farm Customers in all Service Types

85,340 Farm Customers by Hydro One Service		All Customers
Residential Urban	248	209,756
Residential Medium Density	7,155	438,731
Residential Low Density	68,260	335,388
General Service - Energy	9,557	93,605
General Service Demand	120	6,119
Sub Transmission	12	829

Hydro One

Cost parity, delivery costs, Other jurisdictions & energy self-sufficiency

In the Ontario market, and as more customers consider energy self-sufficiency, the consequences for the remaining utility customers are enormous. With less loads sharing the burden of financing Global Adjustment, utility charges will become a much larger per cent of total household consumption.

However, it is difficult in not impossible to compare Ontario to neighbouring jurisdictions. Fuel mix, geographic influence on technology feasibility, load profile and proximity to urban markets, the position of each jurisdiction along the climate change axis, and the historic appetite towards an open energy market – these all must be factored to compare jurisdictions. What is clear to see, is that across all of Canada, rural residential utility costs are equal to 29% of shelter costs and 39% of food costs – electricity is the dominant cost driver.

Table 2 - Utility Costs as per cent of Consumption Costs

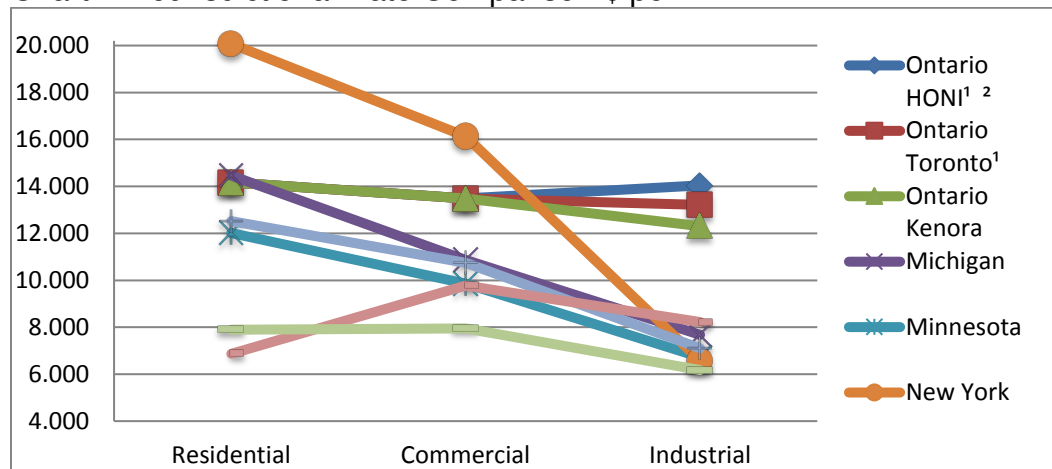
2014 Residential Household Expenditures	All Canada	Rural Canada
Total Expenditures	\$80,728	\$75,189
Total Current Consumption	\$59,057	\$57,030
Electricity – Fuel - Water	\$2,551	\$3,159
Shelter Expenses	\$14,609	\$11,083
EFW as % of Shelter Expenses	17%	29%
Food Expenses	\$8,109	\$7,999
EFW as a % of Food Expenses	31%	39%

Statistics Canada Table 203-0025. Total expenditures include consumption, taxes, insurance and support payments.

Rural delivery charges are significantly higher than urban rates. As shown in Table 2, rural customers pay ten per cent more for utilities than for food and shelter. Energy poverty is growing at alarming rates especially in rural Ontario. LTEP should review reasons to maintain such misaligned urban/rural differences and investigate postage stamp costs for all delivery charges in all Ontario regions.

For business and industry rates, instead of trying to compare Ontario to competing jurisdictions, with different economies, geographies, populations and energy system assets we can look at rate declines within every jurisdiction separately. Chart 1 shows steep price declines from residential through to industrial rates within each jurisdiction. All but Ontario incent industry with an advantageous electricity rate.

Chart 1 – Jurisdictional Rate Comparison ¢ per kWh



US EIA, Canada Manitoba Hydro & IESO

A reliable grid and access to safe affordable energy will help sustain and deliver on the Premier's challenge to expand rural Ontario and the agri-food sector. A LTEP with a cost-effective focus, balanced with a complete fuel mix, reliability, environmental, community and Indigenous engagement, CDM and capacity driven innovation, will benefit all Ontarians.

LTEP has the enviable duty to advance competitive priced energy generation, delivery and consumption to Ontario. Success is measured by more than price. Reliability, flexibility, sustainability and carbon results will also signal the degree we attain our goal. If Ontario has done the heavy lifting in the electricity sector by closing coal fired generation and adding green sustainable generation to the provincial portfolio, LTEP should signal a change in mindset from bulk asset management at prohibitive costs, to a flexible modular system able to compete with neighboring jurisdictions only now beginning to look for clean energy procurements.