



December 16, 2016

Minister of Energy  
c/o Andrea Pastori  
Strategic Policy and Analytics Branch  
Ministry of Energy  
Toronto, Ontario  
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### **Formal Review of Ontario's 2017 Long Term Energy Plan**

#### **Environmental Bill of Rights Registration # 012-8840**

Dear Minister Thibeault:

The Ottawa Renewable Energy Co-operative (OREC) welcomes the opportunity to submit our recommendations for Ontario's next Long Term Energy Plan. OREC was one of the first renewable energy co-operatives to be incorporated under the new provisions added to the Cooperative Corporations Act in 2009. In 6 years, OREC has grown from 5 to 600 members who have invested over \$5 million in 13 solar projects in Ottawa.

Province wide, over \$85 million of new capital has been invested by renewable energy co-operatives allowing Ontarians to directly benefit from community ownership of energy projects, participate in co-op decision making, and learn about the positive environmental impacts of renewable energy and energy conservation.

For more information on the role that community ownership plays see the report **Power of Community:** [trec.on.ca/report/the-power-of-community/](http://trec.on.ca/report/the-power-of-community/)

### **LTEP 2017 – The Big Picture**

#### *Energy Use and Climate Change*

We welcome the broadening of the LTEP to align energy planning with the Ontario's Climate Change Action Plan and include all fuels as well as electricity. It will be very important that there is clarity and consistency between these two key plans. For example the significant energy efficiency goals and actions in the Climate Change Plan must also appear in the LTEP. The accelerated support for electrification of vehicles and heating in the Climate Change Plan must also be addressed specifically in plans for electricity and natural gas in the LTEP. Finally, the LTEP must specifically address the eventual phase out of fossil fuels and the transition to 100% renewable energy by setting goals as to how much of this will be achieved in the planning cycle.

### *The Pivotal Role of Distributed Generation*

These significant changes in energy demand and structure must not only be addressed at the provincial level. They need to take account of changes to the way the grid functions and the ways that the grid will be fed and used. Efficiency gains, more electric vehicles, conversion to heat pumps, and use of energy storage technologies will mostly affect local urban demand. Distributed generation and power storage along with locally planned and managed conservation and demand management will be able to respond to these changes more effectively than new large scale transmission connected capacity. When bolstered with modern communications, sensors and planning, distributed generation is also significantly more resilient than centralized generation.

Local renewable power sources will have significant role to play in a grid based on distributed generation and a climate restrained future:

- Distributed renewable generation is more flexible in terms of size and scheduling of new capacity and minimizes transmission losses and transmission infrastructure
- Distributed renewable resources are easily matched with local storage, electric vehicle demand, and increase in heat pump use to maximize LDC flexibility
- Renewable power costs are fixed over the life of the assets – stabilizing power bills for decades to come
- Distributed generation provides local economic development, and can be capitalized from community sources without provincial capital investment

### *Changes on the Horizon*

The LTEP must also contain a sound risk management strategy that is flexible enough to respond to global innovation and the inevitable impact of disruptive technologies and “deep electrification”. These impacts will result in rapid reductions in cost of energy related technologies, and have the ability to transform power grids into networks of connected semi-autonomous regions. Because of these transitions and disruptions, the current seven-year planning cycle is inadequate in this rapidly changing environment. We recommend a continuous, iterative planning cycle.

A good risk management approach will also be essential to avoid stranded assets. This means including flexible arrangements for the import of hydro-electricity from Quebec and the building in of “off ramps” to cancel major infrastructure investments, like nuclear refurbishment, if they are not needed. Indeed, it is possible there will be no place for nuclear power in the grid of the future, so that it would be risky to lock in plans for their long term use.

### *Community Ownership*

The community power business model used by renewable energy co-operatives like OREC has been shown in Ontario and many other jurisdictions to provide the most effective way of financing and operating distributed generation:

- Community owned systems provide much higher economic and social benefits than those of privately owned renewable power systems<sup>1</sup>
- Individual savings are unlocked from traditional investments and used to purchase RRSP and TFSA eligible shares in local co-operatives or investment funds
- All returns are earned, spent and re-invested locally
- Local installers are more likely to be used creating local employment

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<sup>1</sup> TREC “The Power of Community” June 2016 <http://www.trec.on.ca/report/the-power-of-community/>

- Community ownership means more community acceptance (less NIMBY)

In addition, the community power business model can be used for more than just the generation of renewable power. There is great potential for renewable energy co-operatives to capitalize and operate power storage, energy efficiency retrofits, and to manage micro-grids.

Support for the community power model will allow flexibility to bring more renewable generation online, in particular if the province experiences the more than likely outlook C or D electricity end-use scenarios (increasing use owing to electrification of transport etc.) - See page 12 of LTEP discussion guide.

### *The Importance of a Regional Planning Approach*

Given the importance of distributed generation, the 2017 LTEP and the continuing planning process should be built around a network of regional plans developed under the Regional Integrated Resource Planning process. These plans should optimize local renewable generation and storage options, as well as innovative LDC conservation, demand response, and generation policies. LDCs and municipalities should be required to collaborate on and align their IRPs and community energy and emissions planning processes. All local stakeholders, including local renewable energy co-ops and indigenous power producers should be active participants in this process.

### *Energy Prices*

The LTEP should also recognize the price stabilizing impact of renewable generation capacity. The operating cost of renewable capacity is fixed and new capacity continues to fall in price. In fact, the cost of new large renewable procurement is now lower than nuclear refurbishment (including all hidden costs), so it is disingenuous to call the deferral of the former a price mitigation measure.

## **A New Policy Framework for Community Power**

We now turn to our recommendations on renewable distributed generation, local grid management, and the key role that community owned assets can play in Ontario's energy future. We have divided our recommendations into two parts - 1) New policies and programs, and 2) Technical and rule changes.

### *Policy recommendations to support community ownership*

1. Expand Role of Renewable Energy Co-operatives to all Clean Energy Technologies:

Renewable energy co-operatives are limited under the Co-operative Corporations Act to the generation of electricity from renewable sources. However, as noted above, the community ownership business model has great potential to capitalize investment in energy efficiency retrofits, power storage, renewable gas production, and grid management.

We recommend that the LTEP include amendment of the Co-operative Corporations Act to allow Renewable Energy Co-operatives to do business in all clean energy sectors.

2. Establish a Comprehensive Long Term Net Metering Strategy

To maintain and grow a viable and strong community power sector it will be necessary to have a smooth policy transition from the current FIT program environment to one based on net metering. The cost of community scale solar is now close to the peak time of use rate for electricity. The cost of the power storage is falling rapidly. Within 5 years the cost of solar plus storage in a net metered system will be competitive for most consumers (so called grid parity).

We therefore recommend that LTEP include a 4 year interim support measure for net metered community owned renewable power projects in the form of a declining capital cost contribution.

To maximize the value of distributed renewable power it is also important that the net metering strategy include a full range of options including so called virtual net metering and virtual community power plants.

*Virtual net metering* allows one or more customers to share the electricity generated by a renewable power facility (or facilities) that is not physically connected to their property (or their meter). Customers receive credit on their electric bill in proportion to their financial interest in the renewable power facility.

This policy would greatly expand the potential for local self-generation from renewable sources, contributing to conservation and demand management goals as well as the resilience and flexibility of LDCs and their customers. Virtual net metering or an equivalent policy is used in 15 US States, as well as Nova Scotia and Alberta.

We recommend that the LTEP include a virtual net metering policy and mandate LDCs to offer it.

By aggregating a large number of distributed solar + storage systems on multiple buildings using modern telemetry and controls, a community owned *Virtual Power Plant* can be used to increase grid resilience and provide dispatchable local generating capacity and demand response. This is currently being demonstrated in Ontario by Powerstream through their Power House Virtual Power Plant, as well as in an increasing number of jurisdictions around the world including New York State, Australia and Germany.

The benefits of this distributed solution include: sharing capital costs with community investors for DR capacity, increased resilience resulting from a de-centralized plant, better visibility for electricity market operators due to improved monitoring of distributed generation assets, T&D equipment upgrade deferrals, as well as the many benefits of distributed generation already discussed.

We recommend that all LDCs in Ontario be mandated to allow Virtual Power Plants to participate in electricity market services currently reserved for utility scale projects (e.g. Demand Response Auctions).

Many LDCs do not have the experience to make full use of net metering within their networks.

We recommend that the LTEP include training and capacity building support for LDCs and renewable energy co-operatives in the planning and operation of local grids using net metered assets.

Finally renewable energy co-operatives are ideally positioned to finance and operate distributed power storage capacity within local distribution systems.

We recommend that The LTEP include a policy to set tariffs for the valuable benefits of power storage and rules governing their operation in distribution networks and in net metered projects.

## Technical and Rule Changes

### 1. Ensure consistency of technical requirements across LDCs:

Technical requirements for the connection of distributed generation vary widely across LDCs in Ontario. This has led to different connection arrangements across LDCs.

We propose that province-wide technical requirements for distributed generation be developed, similar to having a province-wide Electrical Safety Code.

### 2. Reform Rate Design

Rate design and utility business models are forecasted to be under increasing pressure over the next decade due to the rapid proliferation of distributed generation and micro-grids. Many jurisdictions, most notably New York State are taking a proactive and serious approach to addressing challenges with traditional “cost-of-service” utility regulations and traditional rate design structures.<sup>2 3</sup>

We would strongly encourage the LTEP to leverage the significant efforts on rate design in other jurisdictions including tying utility revenues to performance, moving towards more granular rates, and making data available and tracking outcomes.

### 3. Modernize Codes and Standards

Planning for a resilient and sustainable energy future also requires revisiting numerous codes and standards which impede and oftentimes prevent the adoption and integration of new cost effective distributed generation strategies.

The LTEP should collaborate with stakeholders to modernize codes and standards to improve interoperability of metering and control systems, improve LDC billing for net-metering, reduce interconnection costs, and facilitate virtual net-metering and virtual power plants<sup>4</sup>.

### 4. Improve Building Attribute Data

At present, LDCs generally hold very little information on building form. Addition of improved building attribute information and building archetypes to utility databases will allow for greater consistency in demand forecasting and set the stage for complete and consistent community energy and emissions inventories to be developed to track progress towards targets over time.

The LTEP should assist LDCs in sourcing building attribute information from MPAC, as well as housing and building archetypes as defined by the Building Code or Natural Resources Canada, and associating this data with each customer account.

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<sup>2</sup> See “Reforming the Energy Vision (REV)”

<https://www.ny.gov/sites/ny.gov/files/atoms/files/WhitePaperREVMarch2016.pdf>

<sup>3</sup> The report *Full Value Tariff Design and Retail Rate Choices* prepared for the New York State Energy Research and Development Authority provides an excellent summary of opportunities for improved rate design.

<sup>4</sup> See The Canadian Smart Grid Standards Roadmap for a more thorough investigation of opportunities to modernize our codes and standards  
([https://www.scc.ca/sites/default/files/publications/Smart\\_Grid\\_Report\\_FINAL\\_EN\\_3.pdf](https://www.scc.ca/sites/default/files/publications/Smart_Grid_Report_FINAL_EN_3.pdf))