

Integrated Energy Resource Plan Consultation

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Submission from the Ottawa Renewable Energy Co-operative (OREC)

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The Ministry of Energy and Electrification is seeking input and perspectives from the public, stakeholders and Indigenous communities to inform the integrated energy resource plan. This initiative builds on significant work completed over the past six years to refine system planning and meet the challenge of a growing economy.

Overarching Question:

- ***What policy options and actions should the government consider in the integrated energy resource plan to achieve Ontario's vision for meeting growing energy needs, keeping energy affordable and reliable, ensuring customer choice and positioning us to be an energy superpower?***

A 2022 IESO report showed that a significant portion of Ontario's future electricity needs could be met at competitive cost with Distributed Energy Resources (DERs). The costs of DERs are continuing to fall, increasing DER potential every year. However, current Ontario policy limits the deployment of DERs to simple "behind the meter" net metering with an annual limit on individual customer meters.

New policies and programs need to be put in place to 1/ maximize net metering potential through regulatory change to allow multi meter net metering, community net metering and other options, and 2/ utilize all suitable sites within distribution systems "in front of the meter" through innovations such as Community Solar and Community Energy Parks. More details are provided below.

These policies would maximize the contribution of DERs to Ontario's energy mix while at the same time providing the opportunity for all Ontarians to benefit from the lower cost of locally generated electricity. It would also help Local Distribution Utilities manage increasing demand and peak loads as well as build community wealth in the local economy through community ownership.

Most importantly these DER policies and actions are self financing with minimal impact on the LDC rate base.

Planning for Growth

- ***Building on the recommendations of the EETP's final report, what actions should be prioritized to enhance planning across natural gas, electricity, and other fuels?***

OREC recommends that Distributed Energy Resources (DERs) play a central role in energy planning in Ontario – not only those DERs that can be installed “behind the meter” on customer sites but also as so called “non-wires alternatives” “in front of the meter” - feeding directly into the distribution grid and owned by LDCs and community third parties such as renewable energy co-operatives. This means introducing new policies such as community solar and virtual power purchase agreements that may be new to Ontario but have a proven track record elsewhere. See more detailed recommendations below.

We also recommend that Regional Integrated Resource Planning include 1/ community scale financed and owned DERs as Non-Wires Alternatives and 2/ assessment of achievable Behind the Meter demand reduction potential that assumes removal of regulatory and other barriers to DERs adoption.

- ***The government's priority is to ensure Ontario has the energy resources it needs to support growth. Are there opportunities to enhance the province's approach to procuring electricity generation supply to better serve this priority?***

OREC recommends the following changes to improve procurement and encourage community ownership of DERs:

1/ eliminate the need for bidders to become Market Participants for renewable DER and storage projects,

2/ reduce the performance security amounts to be more friendly to community owned DER entities such as renewable energy co-operatives with modest balance sheets (but who are qualified operators of renewable generation systems by virtue of experience).

3/ Allow DER projects that are electrically proximate by virtue of being connected to the same distribution station to share transfer trip resources, and to be considered as part of a single project, as long as ownership is identical among the various component projects.

DERs have been shown to have the potential to cost effectively meet much of Ontario's projected growth in electricity demand at competitive prices, taking advantage of the long-term stable price of renewable energy and providing much needed local economic development and building community wealth. DERs should be central to the province's procurement of electricity generation supply. OREC believes that community owned projects in the size range of 1-15 MW could fit well on distribution lines and should be welcomed by procurement planners, particularly if there is significant local investment in such proposed projects.

This approach could spawn as much 25-30 MW in total generation capacity on a Dx line hosted by a single proponent but distributed among multiple individual deployment sites. When community owned, there could be significant social license advantages to such an arrangement, as well as equipment procurement and deployment scaling advantages.

Small projects, along with proponents of small projects such as renewable energy co-operatives, experience systemic challenges to succeed in Ontario energy procurements.

- ***What actions should government consider to promote greater access to electricity and accelerate grid-connections that will support economic growth, connecting new homes, and electrifying transportation and heating?***

OREC recommends the following actions to promote acceleration of grid-connections:

1/ mandate LDC's to work with community partners such as OREC that can finance deployment of renewable DER facilities and BESS facilities where there are transmission constraints.

2/ mandate and fund LDC's to work with community aggregators of DER projects such as OREC in educating municipal planners, housing developers on the benefits of non-wire alternatives to energy supply that can be embedded within new housing developments.

3/ mandate and fund LDC's to work with these partners in educating the public about creating renewable DER and BESS facilities within communities, individual homes and multiple unit dwelling structures.

DERs can be deployed quickly using local labour, local financing, and local ownership, thereby not only accelerating grid connections but also providing local resiliency, customer choice, economic development, and other community benefits.

There continues to be lack of awareness within municipalities, public communities and real estate stakeholders about the advantages of locally financed DER and BESS facilities. LDC's are not achieving much success with their educational campaigns but this situation would improve if LDCs aligned their messaging with local generators such as OREC.

- ***As the need for new transmission infrastructure continues to grow, what steps can government take to ensure that transmitters have the certainty they require to move forward with development work as soon as possible, while also ensuring that competitive pressures keep costs as low as possible?***

OREC believes that maximizing community owned deployment of DERs would relieve the pressure on building new transmission infrastructure while also minimizing line losses and costing less.

- ***What policy guidance should the government provide to the Ontario Energy Board (OEB) with respect to the long-term role of natural gas in Ontario's economy and opportunities for low-carbon alternatives in the gas system?***

OREC recommends that the OEB be instructed to regulate energy in Ontario in a way that appreciates that natural gas consumption in Ontario will cease to grow, and that it will decline significantly over the next 20 years.

- ***How can the government best support Indigenous leadership and participation in energy planning and projects?***
- ***How can provincial planning processes be enhanced to support high growth regions, ensure greater coordination between energy resources, and better integrate municipal, distributor and regional planning processes?***

OREC recommends that LDC's be mandated to work with municipalities to create local renewable DER development plans. Municipalities similarly should be mandated to plan for and coordinate deployment of community owned DER resources within their boundaries, including conducting educational campaigns to overcome reluctance with rural zones to allow new uses of land for DER resources.

Much of the reluctance currently witnessed within rural land zones derives from a sense of absence of benefits to local resident from prior large renewable energy projects. DER projects that are created and funded by local residents can turn that reluctance around. Getting to that state will take greater alignment of values and priorities among LDC's municipalities and such partners as renewable energy co-operatives. The government of Ontario has a role in spawning these discussions by means of making its values and energy procurement priorities more aligned with DER opportunities.

OREC also recommends that policies and programs need to be put in place to allow and enable the development of local community financed and owned DER energy hubs and microgrids in high growth communities, particularly where high use customers can co-finance and operate these hubs. See more below.

- ***What cooperation opportunities exist across other jurisdictions to support energy trade, construction of transmission infrastructure (ex. pipelines and interties), and transportation electrification?***

OREC recommends that pipelines should be electrified, and there should be a priority on building DER infrastructure nearby pipeline compressor stations that can supply renewable energy to these facilities. Where there are land use challenges for such facilities, there should be

changes in regulations to allow community-based proponents to supply such energy to pipeline energy loads from distances by means of “virtual power purchase agreements” – see also below.

- ***What types of technical information and forecasts would best support sector participants and energy consumers as the system is built out for growth and the economy increasingly electrifies?***

OREC recommends that metrics be developed that would provide consumers a measure of the relative resilience of their local grids and the impact of rapid load growth from new developments on this resilience.

OREC believes that consumers should understand the frailties of their local grids (if any), using a metric that describes relative resilience to extreme weather events or rapid load growth. Such metrics would alert consumers to the need to take personal measures to implement energy resilience at their homes or businesses. The Government of Ontario should be more transparent in its understanding of localities where there may be inadequate grid redundancies, distribution capacities or transmission line capacities.

Affordable and Reliable Energy

- ***What further steps should the government take to enable households and businesses to manage and make informed decisions about their energy use?***

OREC recommends that consumers be provided with better information on alternatives to gas powered generators including renewable energy/battery storage systems and hybrid inverters, together with funding to support their adoption.

OREC witnesses many homeowners taking personal measures to implement grid independence by means of installing gas power generators. This gives the gas energy industry an undeserved favourable reputation as a provider of resilience solutions.

- ***What actions could the government consider to ensure the electricity system supports customers who choose to switch to an electric vehicle?***

OREC recommends that electric vehicle retailers be shown how to encourage greater adoption of residential solar net-metering systems using the new Time-of-Use rates as a way to reduce EV fuel costs.

The recent following changes in consumer pricing and regulations should be promoted as enablers of electric vehicle adoption:

- Introduction of Ultra Low Time-of-Use pricing,
- Net-metering regulation changes allowing of credits based on time value of export,
- Recent reduction in the Ontario Electricity Rebate.

These are all good initiatives, but not known, or understood, by electric vehicle vendors or buyers. This will have the added benefit for lowering the operational costs of the grid by balancing the localized demand load. OREC has provided a technical training session on this aspect of EV ownership for our membership. (Single zoom session with 70 attendees). We plan to do more.

- ***What actions should government consider that would empower customers to install innovative technologies to generate or store energy on-site to reduce costs and improve resiliency?***

OREC recommends the following actions to empower customers to install DERs. It should be noted that all of these actions can be self financed with no impact on the LDC rate base:

1. **Multi-Metered Net Metering.** To maximize the DER potential “behind the meter” on customer sites, OREC recommends that net metering regulations be amended to allow residential and commercial tenants and condo owners in multi-metered buildings to share in the credits accruing from net metering based on the total consumption of the facility.
2. **Community or Virtual Net Metering.** OREC also recommends that regulations should also be amended to allow several customers in a community to share net metering credits from the optimum placement of renewable generation and storage – so called community or virtual net metering.

Currently in Ontario, customers are limited to the installation of one DER system per meter and can generate only up to their annual consumption through net metering. In multi-meter buildings only one meter can be net metered. Further, many customers in a community have the ability to install more DER capacity behind the meter than they need, while others have limited space.

There are many building types across the province that would benefit from these two amendments. These include housing co-ops, social housing, other multi-unit residential buildings, multi-unit commercial retail (e.g. strip malls), and other building types with large roof space and multiple tenants.

Allowing these amendments would provide customers with more choice and control over their energy needs, while encouraging self-supply at a single property. It would continue to enable innovation and adoption of new technologies for all customers in their energy transition. It will also assist LDCs in managing demand at the least cost.

See specific regulation change recommendations below and attached Oct 26, 2022 letter to Minister of Energy from Hydro Ottawa Limited.

3. **Disaster Recovery Power Hubs.** OREC also recommends that net metering regulations be amended so that designated Disaster Recovery Sites be able to generate to the maximum capacity that the facility can install (no net metering limit or 12-month limit), so that they can generate at all feasible times and be able to earn a reasonable profit, thereby lowering the facility's operational cost. When disasters and outages occur, the system would revert to an electricity island needed to provide food & shelter, cooling, and phone and EV charging.

Establishing emergency recovery sites as energy generation/balancing hubs would provide a new level of emergency preparedness while enhancing the local grid and could be financed with local capital. Together these actions would directly improve the operational efficiency of the grid, while simultaneously improving the confidence of the public in their security. Allowing these facilities to be community owned would enhance the public understanding and interest in these resiliency centres.

<https://www.orec.ca/post/equipping-ontario-s-disaster-recovery-centres-with-renewable-generation-and-battery-storage>

- ***What specific actions could position the integrated energy resource plan to best leverage distributed energy resources (DER) that enhance local and province wide grids to support energy system needs reliably and at the lowest cost?***

OREC recommends the following specific actions to utilize the significant opportunities to install “front of the meter” DERs on vacant land or on customer sites (in front of their meter), with financing, ownership and operation by third party community entities such as renewable energy co-operatives. It should be noted that all of these actions can be self financed with no impact on the LDC rate base:

1. **Virtual Power Plants (VPP).** We recommend that LDCs be enabled to manage electricity demand through the use of Virtual Power Plants – a system that integrates multiple DERs on customer sites to provide peak shaving, load following and ancillary services, particularly in areas that are demand constrained.

Many customers are purchasing EVs and heat pumps. Many others have FIT contracts which will be up for renewal starting in 2030. This provides a real opportunity for LDCs to pool these generation, storage and demand response installations and operate them as a Virtual Power Plant. Well over 100 OREC members own one or more of these technologies and would be a natural partner to Hydro Ottawa for such a VPP.

2. **Community Solar.** We recommend that Ontario follow US States and Nova Scotia and introduce Community Solar - a gateway for homeowners without suitable rooftops or financial means, and tenants who have no control over their building's physical assets, to reap the benefits of locally produced renewable energy and contribute to electricity supply.

Community solar is a win-win for all parties involved, and allows all Ontarians to contribute to and benefit from our growing demand for power, whatever their means or location: <https://www.orec.ca/post/why-do-we-need-community-solar-in-ontario>

- ❖ A medium sized solar generation facility is installed at a suitable site within a community and the electricity is fed directly into the local community grid. This facility could be on private or public vacant land, over parking lots, or on large roofs.
- ❖ Any electricity consumer in the community can subscribe to a portion of the facility's kW capacity and earn a credit for their share of the generated electricity on their electricity bill.
- ❖ Because of economies of scale, Community Solar costs less than individual household rooftop deployments and therefore achieves greater financial returns as well as better greenhouse gas impacts than individual household deployments.
- ❖ Community Solar assets are self financed, owned and governed by community-based entities such as renewable energy co-operatives.
- ❖ Community Solar contributes to local economies and builds community wealth, while also helping Local Distribution Companies like Hydro Ottawa meet their increasing electricity demands. Generation can be placed in areas with high load growth and can offset the need to build expensive new transmission resources.

3. **Community Energy Facilities.** We recommend that designated high growth multi-use economic communities, such as hosts of the IT industry, be enabled to finance, own and operate their own community micro grid or energy park in collaboration their local LDC.

These community financed and owned energy parks would contain both renewable energy generation and storage and would operate jointly with behind the meter generation and emergency battery storage within local industries. The combination of rapid growth of demand, industrial net zero and ESG goals, and the need for back up generation makes this policy not only efficient but also necessary.

We also recommend that Battery Energy Storage Systems (BESS) financed and owned by community third parties including renewable energy co-operatives be enabled to balance the grid in peak constrained parts of the distribution system. These systems, like EV charging stations would be exempt from demand charges and generate an income stream from arbitrage between time of use rates and grid balance (Ancillary Services) fees.

4. **Virtual Power Purchase Agreements (VPPAs).** Ontario is currently proposing a regulation to allow certain Class A commercial / industrial customers outside of distribution grids to purchase renewable power from community owned off-site generators to manage their Global Adjustment peak demands. We recommend that this regulation be amended to apply to both Class A and Class B customers and to third-party generators within distribution grids. Further it should also allow the customer to purchase Renewable Energy Certificates under "contract for differences" power purchase agreements.

These additions would enable all large users to both manage their peak demands and purchase renewable energy to meet their ESG and net zero goals. It would also add valuable DER capacity within distribution grids that would be completely self financing. These DERs could be financed and operated by renewable energy co-operatives thereby also building community wealth.

5. **Encourage Exclusive Behind-the-Meter Energy Suppliers.** Ontario currently allows Behind-the-Meter facilities to be owned and operated by third parties. These facilities typically supply only a portion of the host facility's annual load. OREC recommends that regulations be changed to allow third parties to have an exclusive relationship with the LDC and then resell the electricity to the host customer, both from the grid and from locally generated renewable energy, but with a view to minimizing licensing and qualification barriers in so doing.

Many building owners and operators of industrial facilities would happily contract with third parties as exclusive energy suppliers, particularly if these entities are capable of supplying locally produced renewable energy at the facilities. OREC would be pleased to enter into a Behind-the-Meter arrangement with such a host facility.

- ***What policy or regulatory changes should government consider to address financial risks and support adoption of DER in the long-term?***

OREC recommends the following Policy/Legislative Changes

1. **LDC Flexibility.** Amend legislation to allow LDCs to finance or procure their own DERs within a service area, to sign Power Purchase Agreements with local community generators or providers of battery storage and other grid services, and to collaborate with communities to build micro-grids and energy parks in high growth economic communities.
2. **Customer Choice and Collaboration.** Amend legislation to provide all customers the right to consume, store, share and sell the renewable energy they generate, and to collaborate with other customers to do the same.

These two overarching policy changes would provide LDCs the flexibility to manage local demand in their services areas using DERs, and customers the right to generate their own power or collaborate with other customers and their LDC to maximize DER potential. The European Union's Renewable Energy Directive (EU) 2018/2001 Article's 21 and 22 give these rights of self generation and formation of "Energy Communities" to all citizens.

3. **Value Renewable Power.** Ontario should follow the United States and publish a standard methodology for the valuation of renewable energies based on their environmental, line loss reduction, resiliency and other benefits. Furthermore, maintain an up-to-date cost database for government, private and community financed renewable generation and storage to be used in all planning and DER potential assessments

Having such a standard methodology and database would ensure consistency across the province with respect to procurement and purchase of renewable energies. It would also take into account the continued lowering of the cost of renewable generation and storage capacity and make planning and potential studies more transparent.

4. **Community Solar.** Introduce Community Solar enabling legislation with a set aside for low- and middle-income household subscribers and priority for community ownership and governance. See above for details.
5. **Virtual Power Plants.** Enable and incentivize LDCs to manage their demand through Virtual Power Plants. See above for details.
6. **Leveling the Procurement Playing Field.** Make community owned DERs eligible within provincial electricity procurements such as LT2. In addition, lower barriers such as large performance security provisions and eliminate Market Participant requirements within future energy procurements, specifically for third party community DER generators. Ensure parity as between indigenous and community-based suppliers in future energy procurement.

Current procurement policies are not friendly to community-based proponents who aspire to build <10MW facilities within distribution systems. Modifying policies would facilitate and increase local cost competitive locally financed and owned DERs through the provincial procurement system.

OREC recommends the following Regulatory Changes

1. To maximize the DER potential “behind the meter” on customer sites:
 - **Amend Ontario Reg 541/05, Net Metering,** to allow the transfer of generation credits between LDC-metered accounts (including different rate classifications) that are physically located at the same facility. The credits would be transferred through a non-cash monetary credit. The credits would be calculated at the rate class of the generation account (common area account) and shared with the residents under the same requirements of the current regulation.
 - **Amend Ontario Reg 679/21, Community Net Metering Projects,** to allow projects that have more than one account owner to participate and to share net metering credits among participants. The existing Community Net Metering Projects pilot regulation requires that all participating accounts must have the same account owner.
 - **Amend Ontario Reg 541/05, Net Metering** to allow designated Disaster Recovery Sites to be able to always generate to the maximum capacity that the facility can install (no net metering limit 12-month limit).
 - **Clarify and re-interpret Ontario Reg 541/05 Section 7.1, Net Metering,** to interpret a customer’s “own use” as including the ability for a third party to convey, distribute, sell, offer to sell, or resell renewable electricity generated on the customer’s building or facility.
2. To enable both Class A and Class B customers to take advantage of using offsite renewable generation to lower their power bills and their carbon footprints as well as their peak demands:
 - **Amend Ontario Reg 429/04** to enable all Class A and B distribution and transmission system customers to sign “contract for differences” PPAs with community owned distribution system non-utility generators, including renewable energy co-operatives.

Further amend this regulation to allow PPAs to include purchase of electricity generation and/or renewable energy certificates in addition to peak demand management.

- ***With the energy sector evolving and distributors considering new roles in serving customers, what barriers exist that limit local distribution companies from taking on new duties that could enable more efficient grid operations, leverage new technologies and further the integration of DERs?***

OREC identifies the following barriers to further use of DERs. See above for the changes needed to remove these barriers.

1. Restrictive net metering regulations.

- Currently in Ontario, customers are limited to the installation of one DER system per meter and can generate only up to their annual consumption through net metering. In multi-meter buildings only one meter can be net metered.
- Further, many customers in a community have the ability to install more DER capacity behind the meter than they need while others have limited space.
- Some LDC's also interpret net metering regulations to prohibit a sale or resale of electricity as it must be for the generator's own consumption, whereas Section 7(1)(a) actually refers to a generator generating electricity primarily for the customers "own use" which could include the ability to sell or resell this electricity.

3. Limits on customer choice regarding generation, storage, sharing and sale of energy they produce and collaboration with other customers and LDCs to optimize and maximise DER capacity.

4. Restrictive legislation limiting LDCs authority to generate, store, procure and wheel electricity in their service areas.

5. Restrictive procurement policies that are not friendly to community-based proponents who aspire to build <10MW facilities within distribution systems.

- ***What further actions could the government take to maintain an affordable energy system for Ontarians throughout the energy transition?***

OREC recommends providing support to LDCs to build their capacity to deliver DERs and modify their billing and management systems. This would minimize the cost of delivering the innovative policies described above so that LDCs can pass on more of the savings to customers.

We also recommend priority be given to inclusive initiatives such as multi-meter net metering and community solar so that tenants and low-income customers can benefit from the savings from locally generated power.