Feedback Form

Distributed Energy Resources (DER) Potential Study – September 30, 2022

Feedback Provided by:

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Date: October 24, 2022

The Independent Electricity System Operator (IESO) is seeking feedback and welcoming questions in relation to the Ontario DER Potential Study, which was published in-full on September 30, 2022.

The final study materials (the main report, the supplemental methodology/assumptions report, MS Excel Appendices, and updated results presentation), can be found on the DER Potential Study webpage.

Please provide any feedback and questions by October 28, 2022 to engagement@ieso.ca. Please use subject header: *DER Potential Study*.

To promote transparency, submitted feedback will be posted on the DER Potential Study webpage unless the sender requests otherwise.

The IESO will consider this feedback in the organization's future work, including but not limited to DER integration. The IESO will publish a document responding to feedback, and with support of the project consultants, respond to any technical questions relating to the study.

Thank you in advance for your contribution.

Takeaways, Recommendations, and Additional Analysis

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Does the report highlight the most relevant results and takeaways from the study? What other results or messages from this study are of high importance?	The report provides a good overview of the costs of DERs and the role that DERs can play in meeting increasing demand and decarbonization of the grid. It is particularly good to see that DERs could on their own eliminate the need for new gas or nuclear capacity, if a high proportion of economic potential can be delivered. Another positive finding is the significant value that solar generation can provide in helping to avoid high-priced electricity that would otherwise be satisfied by gas generation. The key question is how to achieve and deliver this potential. The report effectively considers the roles of technology cost, willingness of customers to adopt DERs, and proper valuation of DERs as key drivers of deployment. However, the report focuses mainly on the Ontario wholesale market and does not adequately address two key non-market drivers that could significantly increase adoption of DERs – both behind the meter (BTM) and front of meter (FTM) community-based resources. 1. **Removal of non-market regulatory barriers applying to the distribution system, and 2. Providing LDCs more powers and flexibilities to deliver DERs:** 1) The analysis omits the role that removal of non-market distribution system regulatory barriers could play in encouraging DER deployment. Nor is “removal of the barriers” included in any of the various scenarios. As described below, these barriers are preventing LDCs and customers from

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	choosing DERs to meet their current needs. These regulatory barriers include: • limiting net metering to one meter in “single pin” metered buildings, and • not allowing customers to procure power through Renewable Power Purchase agreements from local FTM suppliers, or through virtual net metering of excess DERs from other customers. These barriers could be removed quickly in advance of the 2026 DER market design, because they apply to the distribution system and not the wholesale market. Changing these regulations would rapidly accelerate deployment of DERs in the near term, thereby meeting resource needs and decarbonizing the grid. Specific recommendations with examples are provided below. The IESO and OEB are considering piloting some of these recommendations, but they are already in use in many jurisdictions in Canada and around the world. There is no need to pilot them. 2) The report also does not consider the role that Local Distribution Companies (LDCs) can play in deploying DERs within their distribution systems. Current regulations and legislation are preventing LDCs from procuring targeted community FTM renewables and storage, or setting Green Tariffs to sell this power to customers. LDCs need more powers and flexibilities to deliver DERs by including BTM DERs in their CDM programming or procuring FTM

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	DERs to meet their needs in constrained areas. Again, this LDC DER capacity would be installed within their service areas, outside the wholesale market, so there is not need to wait until 2026 to make these regulatory changes.

Do the recommendations capture appropriate actions to acquire the DER potential revealed in the study? Based on the study results, are there other actions that should be considered?	As noted above, there are several major omissions in the recommended actions to acquire DERs that we propose be added to the report: ➢ Changing net metering regulations to allow the sharing of credits among all customers in a “single pin” metered building or facility, ➢ Expanding net metering regulations to allow a customer to sell excess credits to other customers through virtual net metering or Power Purchase Agreements ➢ Allowing LDCs to procure FTM renewable energy and storage to meet their needs, to include BTM solar in all CDM programming, and set Green Tariffs to help customers meet their net zero and ESG goals BTM and FTM Solar (with storage where appropriate) are identified as having high economic potential and candidates for targeted procurement and programs. However, only cost and willingness of customers to use DERs are considered in the estimation of achievable potential and recommendations. There are several immediate regulatory changes that would allow LDCs and power customers to procure solar + storage to meet their short-term objectives and assist the province in helping resource adequacy. We would like to illustrate our proposals with examples: 1. Allow BTM single pin multiple unit housing to share the credits from solar net metering Consider Ontario’s many housing co-operatives. They often have just a small amount of insulation and baseboard electric heat. Each unit has its own electricity meter and bills are high. Grants are available to upgrade the

efficiency of the building and switch to heat pumps, but the savings are not enough to reach the savings threshold required for the grant. There is roof space for some net metered solar generation, but presently, the credits can only be applied to one meter in the building.

With the proposed multi-meter changes to net metering regulations:

- ✓ *a larger solar system can be financed and installed through a local renewable energy co-operative,*
- ✓ *the savings can be shared among all tenants,*
- ✓ *the savings threshold for the grant can be reached,*
- ✓ *everyone's bill can be reduced and stabilized, and*
- ✓ *carbon emissions permanently reduced.*

These options would only require the local LDC to make accounting and billing changes

2. Allow LDCs to procure FTM and BTM solar (+ storage) in constrained high growth distribution areas where it cheaper than wires options.

Many LDCs are facing increasing demand in certain parts of their service area but are currently limited in their non-wires options to BTM voluntary customer conservation programs.

If LDCs could buy power from FTM and BTM solar plus storage in targeted constrained areas (from renewable energy coops and other local generators), LDCs would have the option of meeting new demand in these

constrained areas with DERs. The generators would sell power from FTM facilities to the LDC. Customers could sell excess credits from their BTM net metered systems to the LDC.

This would also compensate customers fairly for the value of their DERs – a recommendation already made in the Report.

3. Allow Customers to purchase power from local suppliers of FTM solar (+ storage) through Power Purchase Agreements or Green Tariffs, or from BTM solar (+ storage) on other customer sites through the purchase of virtual credits.

Many institutions, businesses, and residential consumers have net zero or Environmental Social Governance (ESG) objectives. Purchasing power from local renewable energy suppliers and other customers net metered sites would provide them with a local, stable source to meet these goals.

For example, the National Capital Commission (NCC) LeBreton Flats development project in Ottawa is being designed as a net zero community. This means all facilities built there will generate some renewable energy on site themselves, but they will still need to offset the carbon in any grid electricity they buy. Right now, their only options to do this are to buy Renewable Energy Certificates or Carbon Offsets in addition to grid power.

If this recommendation was implemented, facilities on the Flats could buy power from local renewable generators – stabilizing their electricity

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	costs as well as foregoing the need to buy RECs or offsets. *This option would give institutions and businesses outside the Flats that have large roofs or parking areas, an additional source of revenue. Financing these projects through renewable energy co-operatives would provide additional local benefits and options for citizen ownership and investment. If the solar projects were located in demand constrained areas, the local LDC would have an incentive to support the project too.*
Building on the work completed in this study, are there other areas of analysis that should be considered or undertaken that can provide meaningful insights for the IESO and others in the sector?	In light of the above recommendations, we highly recommend that the IESO work with the OEB and the Ministry of energy to immediately analyze current grid regulations governing local distribution to allow greater DER flexibility and choice by LDCs and customers. Changes can then be made in 2023 ahead of the 2026 market renewal in conjunction with the tailored procurement and program initiatives recommended in the Study.

General Comments/Feedback

To summarize our comments, the report focuses mainly on the Ontario wholesale market and does not adequately address two key non-market drivers that could significantly increase adoption of DERs – both BTM and FTM community-based resources. 1. **Removal of non-market regulatory barriers applying to the distribution system, and 2. Providing LDCs more powers and flexibilities to deliver DERs.**

We propose that the following be added to the report and considered by the IESO in their DER implantation strategy:

- Change net metering regulations to allow the sharing of credits among all customers in a “single pin” metered building or facility,
- Expand net metering regulations to allow a customer to sell excess credits to other customers through virtual net metering or Power Purchase Agreements
- Allow LDCs to procure FTM renewable energy and storage to meet their needs, to include BTM solar in all CDM programming, and set Green Tariffs to help customers meet their net zero and ESG goals

Questions Relating to this Study