

February 17, 2021

Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4
Attn: Ms. C. Long
Registrar

Dear Ms. Long:

Re: **EB-2018-0288: comments on the January 18, 2021 report of ICF Consulting “Ontario Distributed Energy Resources Impact Study”**

On behalf of the Electricity Distributors Association (EDA), I thank you for the opportunity to provide written comments on ICF Consulting’s January 18, 2021 Ontario Distributed Energy Resources Impact Study (ICF report). The members of our Regulatory, Finance and Corporate Affairs, and, Operations and Engineering Councils have all contributed to these comments.

We propose that the OEB support and enable all parties to progress on the deployment of distributed energy resources (DERs) and other new technologies. Our LDC members reviewed the ICF report with interest and care. They realize that the OEB commissioned the report to assist it in understanding the pacing and sequencing of activities associated with the adoption of DERs and other innovative technologies. At this stage we propose that the OEB support and enable the deployment of these devices. We anticipate that lessons will be learned and that improvements will be made on a continuing basis. We anticipate that the OEB will use several techniques and metrics to monitor for success. We propose that the OEB communicate any inappropriate outcomes (e.g., cost sharing that doesn’t align with the allocation of risk) at the earliest opportunity and engage all parties in appropriately resolving them.

DER Decision Making and Deployment

While our members strive to provide the greatest value to their customers, they are making decisions (e.g., whether to invest in DERs, how and when to evolve the distribution grid) under uncertainty. From time to time, uncertainty or changing circumstances will reveal that a decision was inappropriate. The LDC will need to know the regulator’s perspective and expectations of these situations (e.g., whether the LDC will be expected to adapt the project or wind it down). Our members acknowledge that unaddressed uncertainties of the consequences of failure could result in decision makers perceiving exaggerated levels of risk.

DERs have been, and continue to be, deployed in LDC service territories. They are impacting system operations, as well as the costs incurred by LDCs, and how those costs are recovered. Many LDCs have hands on experience in deploying DERs, such as demand response devices or customer provided DERs situated behind their meter (e.g., combined heat and power generation). Some LDCs have hands on experience in evaluating the use of DERs as non-wires alternatives (NWA) that will support them in providing their customers with safe and reliable service on an ongoing basis.

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Our members reviewed the scenarios set out in ICF's report and commented that, while they may be relevant at the provincial level and are not unreasonable, they are of limited applicability to their service area. ICF modelled two of the many available DER technologies, where both are capable of injecting into energy and power into the grid. LDCs must be prepared to connect technologies that can inject as well as technologies that are capable of displacing loads and electric vehicles that, in the future, may be mobile load and/or storage devices. Members commented that the next steps set out in the report are among the steps that they have adopted, that some may be adopted in the future - and that there are a range of other steps that can be taken. LDCs' perspectives on the proposed timelines for ICF's recommendations were varied. While some LDCs find them appropriate currently, other LDCs pointed out that their system may be evolving faster than the scenarios depicted in the ICF report, such that some of the mid-term recommendations should be considered in the near term. They also expressed that the ICF recommendations should be reviewed so that they coordinate with the timelines for rate design and other inter-related projects.

Ways to Evolve the Grid

It isn't considered responsible to prepare either an exhaustive list of next steps or a definitive sequencing of any next steps as both depend materially on circumstances (e.g., whether an LDC may experience voltage instability or reactive power issues, whether an LDC will need to actively manage two-way power flows, whether an LDC's existing infrastructure is congested due to the number of DERs or size of DERs or both). There simply isn't a 'bright line' that clearly indicates when an LDC needs to deploy additional infrastructure (e.g., transfer trip infrastructure).

LDCs support evolving the grid responsibly. Our members know that many of the approaches they use today to host DERs cannot be considered sustainable over the long run. Ontario's LDCs are interconnected in a variety of ways, where some are directly connected to the transmission system through a TS owned by the LDC or by Hydro one, some are served through low voltage connections and some are embedded within other LDCs. LDCs are prepared that portions of the upstream infrastructure simply will not be able to support the DERs deployed in the LDC's service territory. This reality was encountered previously under the Feed in Tariff program where portions of the upstream infrastructure were classified as 'red zones' because they were technically incapable of accommodating two-way power flows.

We consider it vital for the OEB to provide flexibility. Adopting a flexible approach has allowed some LDCs to host DERs now (e.g., batteries, PV, wind farms, NWAs) without having the benefit of foundational infrastructure such as automated power flow management, automated and digitized control rooms, universal deployment of SCADA, or even full awareness of the devices that are deployed in the field behind the customer's meter. Flexibility will also be key so that the LDC can appropriately mitigate uncertainty. Our members are keenly aware that a single technological breakthrough (e.g., of anode chemistry, or perovskite performance characteristics) can alter investors' decision making. They are also aware that customers can rapidly assimilate changes in government policy when making investment decisions (e.g., the advent of the Industrial Conservation Initiative (ICI) has resulted in the commissioning of thousands of MW of storage capacity situated behind the customer's meter).

Information for Decision Making

We concur that customers need accurate and complete information for decision making purposes, and that the LDC will need to be prepared and equipped to fulfill the customer's need for safe and reliable service. LDCs are preparing to engage in the same decisions as their customers - what technology to

deploy, where, in what quantity and when. These decisions are being made under uncertainty, including:

- Data uncertainty (e.g., whether commodity be priced locally or using data discovered in the IESO Administered Market (IAM), where the prices in the IAM will depend on the implementation of the MRP),
- Rate design uncertainty (e.g., the long-term design of distribution rates, whether standby charges will be authorized, how undue cross subsidization will be avoided, if discounts or premiums will be charged),
- Revenue stream uncertainty (e.g., whether the device proponent will be eligible to provide ancillary services (e.g., black start) to either the LDC or the IAM),
- Uncertainty over the allocation of risks (e.g., who will bear the long-term costs of site remediation, infrastructure removal, environmental damages),
- Uncertainty of the role of the LDC (e.g., whether the LDC is to provide back up or standby service to all connected devices), and
- Government policy uncertainty.

LDCs acknowledge that remuneration was beyond ICF's scope of work. This issue is the subject of an existing OEB consultation (EB-2015-0043 - Rate Design for Commercial and Industrial Customers) that we propose be prioritized, and we look forward to learning the OEB's next steps. Until then, LDCs will face additional uncertainty with respect to how they will be remunerated, either for hosting DERs they own or for hosting DERs owned/operated by third parties. We recognize that some LDCs charge OEB authorized Standby charges, and we look forward to learning about other applicable rate designs that recover the costs of infrastructure and of the provision of service to customers who make infrequent use of the system.

Today's rate design relies on functionalization, classification and allocation factors based on electricity or peak demand delivered from the grid to devices that uniformly consume electricity. This framework needs to be addressed for whether it can support the quantification of just and reasonable rates that recover the costs incurred to serve customers who require two-way power flows. Going forward, rates must be set so that DER proponents pay their share of the LDC's costs and so that legacy customers can be confident that the rates they pay are free of undue cross-subsidization.

LDCs want to be well prepared to make responsible decisions about when and where to site conventional infrastructure, DERs, NWAs and other such devices, and at what scale so that they can continue to provide customers with safe and reliable service. We note that ICF's report indirectly deals with the allocation of risk. In the past, when certain types of infrastructure were abandoned in the field, the LDC was tasked with 'making safe' and restoring the site - and that it was not compensated for performing these services or for managing the associated risks. Our proposed use of life cycle analysis and comprehensive stakeholder analysis described below are expected to support the early identification of such outcomes, and we are confident that they will be addressed in a timely manner that appropriately balances risks and rewards.

Alternative Frameworks that may Support the Deployment of DERs

Each LDC's grid has evolved differently and informed the LDC's need for and provision of foundational infrastructure. Both the state of the grid and of the foundational infrastructure set the 'context' for

decision making on DERs. For these reasons, there isn't a 'one size fits all' approach that will support decision making.

To assist all parties as they strive to make prudent decisions under uncertainty, we suggest that the OEB consider exploring the deployment of DERs (e.g., for suitability, for alignment with responsibly evolving the system) using one or more of the frameworks identified below:

- A life cycle framework (e.g., from the first point of contact to the final site remediation),
- A stakeholders-based framework that includes both directly and indirectly affected stakeholders,
- For the desirable or advantageous foundational investments (e.g., automated power flow control, ability to remotely dispatch and control devices),
- Frameworks geared to assessing the need for information (e.g., awareness of the asset's characteristics and location, whether real time monitoring is advantageous, for coordinating control instructions, for dispatching under normal and emergency conditions), or
- Frameworks that consider unusual but not uncommon outcomes, such as congestion management or resolution, whether manifest technically or economically.

We further propose that each framework carefully consider the role of the LDC (e.g., for whether it is to provide security of supply under all conditions and to all customers as back up or standby service), and how the costs incurred by the LDC are to be recovered (e.g., from the party who causes the cost to be incurred, from the party who benefits from the cost being incurred). Investors and decision makers need quality information about costs, and LDCs need clarity of whether costs are to be socialized and why.

Information Sharing and Reporting

ICF's report proposes information sharing and routine reporting without clearly demonstrating the value of either. As stated elsewhere, the ICI program has resulted in significant amounts of energy storage being deployed at customers' sites with little oversight, reporting, or information sharing. We recognize that information sharing and regular reporting will assist all by making the lessons learned from failed projects widely available. At this stage in the deployment of DERs we repeat that the regulator needs to be prepared that some projects will fail, and that failure presents a learning opportunity. Project planning should contemplate failure and all parties, including the regulator, should have a sound appreciation for and tolerance of the potential for failure. Failure should not become protracted and, to borrow a phrase from the information technology sector, we encourage the OEB to adopt the perspective that failed projects should 'fail fast'.

Next Steps

In parallel with the steps taken by the OEB, LDCs will continue to adapt. For example, they will refresh and keep their design and operating standards updated so that devices interconnect and interface appropriately. The LDC will be motivated to understand how design and operations will perform under a wide range of conditions and scenarios in order to minimize, and ideally avoid, unanticipated outcomes. We foresee that it will be equally important for the OEB to identify the conditions that will demonstrate that an inappropriate outcome has occurred (e.g., if a party cannot be connected or provided with an appropriate quality of service) and the steps available to the OEB to address the situation and its consequences. This is expected to demonstrate to customers that their interests are being protected.

We also propose that the OEB be included as a stakeholder to ensure that the provision of economic regulation does not delay either technological or grid evolution (e.g., under what conditions LDCs will be

permitted to control DER infrastructure situated behind the customer's meter). We note that OEB staff recently issued a bulletin describing their support for LDCs controlling battery storage situated on the customer's premises that cost effectively addresses chronic outages of long duration. We point out that the ICI has resulted in the deployment of thousands of MWs of storage capacity throughout the province, including in the service areas of many LDCs – and that it is often utilized for hundreds of the 8,760 hours in a year. LDCs anticipate that benefits can be achieved if they can access this infrastructure. LDCs anticipate that controlling infrastructure situated on the customer's premises will raise the issue of compensation, both compensation remitted by the LDC to the owner of the storage device and compensation remitted by the end user to the LDC that relied on innovative technology rather than traditional infrastructure.

Thank you again for the opportunity to comment on ICF's report. If you have any questions on these submissions, or require any further detail, please do not hesitate to contact Kathi Farmer, the EDA's Senior Regulatory Affairs Advisor, at kfarmer@eda-on.ca or at 416.659.1546.

Sincerely,

A handwritten signature in black ink, appearing to read "Teresa Sarkesian". The signature is fluid and cursive, with a long horizontal stroke at the end.

Teresa Sarkesian
President and Chief Executive Officer