



July 22, 2025

**VIA RESS**

Ontario Energy Board  
P.O. Box 2319,  
2300 Yonge Street, 27<sup>th</sup> Floor  
Toronto, ON M4P 1E4  
Attention: Acting Registrar

Dear Mr. Murray,

**Re: DSO Capabilities Consultation**  
**Board File No.: EB-2025-0060**

We are counsel to the Distributed Resource Coalition (“**DRC**”) in the above-noted Ontario Energy Board (the “**OEB**” or “**Board**”) stakeholder consultation on Distribution System Operator (“**DSO**”) capabilities (the “**Consultation**”). DRC provides these comments in response to the ongoing Consultation and OEB staff’s discussion paper (“**OEB Staff Paper**”) and DNV’s report on DSO capabilities in Ontario (the “**DNV Report**”).

**About DRC**

DRC is a group of electricity customers and consumers, consisting of end-use residential customers, non-profit organizations, and owners’ associations. DRC’s members are directly affected by and interested in: (i) optimizing existing energy assets; (ii) efficiently facilitating the integration of existing and innovative distributed energy resources (“**DERs**”), including electric vehicles (“**EVs**”), to achieve customer and grid solutions; and (iii) providing input on direct customer needs and local distribution company opportunities relating to EVs. DRC’s members for the Consultation include the Electric Vehicle Society (“**EVS**”) and Plug’n Drive (“**PnD**”).

EVS represents over 1,000 end-use, largely residential, individual EV electricity customers. EVS has 12 local chapters of electricity rate-paying customers in Ontario. EVS’s mandate is to consolidate, represent, and advocate for the interests of its members on matters related to DERs, transactive energy, innovation, and electrification of transportation.

PnD is the authoritative convener of current and future EV customers and acts to provide access to facts and information to electricity and EV customers on electricity and electric mobility issues and choices. PnD works with each and all of electricity/EV customers, vehicle manufacturers, governments, and utilities to ensure that all are afforded the best available information in order to make fact-based plans and choices.

**DRC’s Comments**

DRC's comments are organized in accordance with the discussion questions provided as part of the DSO Capabilities Symposium, including: (i) defining opportunities and objectives; (ii) evaluating proposals and approaches; (iii) balancing standardization and flexibility; and (iv) DRC's concluding comments and recommendations.

## 1. Defining Opportunities and Objectives

DERs, including behind-the-meter storage and Vehicle-to-Grid ("**V2G**") and Vehicle-to-Home ("**V2H**") systems, and aggregated EV systems through emerging technology applications like virtual power plants ("**VPPs**"), are key decentralized, customer-driven energy storage and supply solutions. With the anticipated electrification and energy transition, EVs will increasingly serve as mobile energy storage assets that can discharge power back to the grid (V2G and VPP) or support home and building energy needs (V2H). These technologies have significant potential to enhance grid flexibility, improve resilience, and optimize local energy use.

PND's report on the costs and benefits of EVs for Ontario's electricity grid<sup>1</sup> (the "**PnD Report**") found that Ontario's electricity system can obtain \$28,000 worth of benefits over the 13-year life of every EV participating in mobile storage. The PnD Report found that "mobile storage reduces daytime demand, avoiding the use of natural gas, and makes more efficient use [of] Ontario's base-load hydro and nuclear resources."<sup>2</sup> Further, funding mobile storage for use at night could generate \$15,000 worth of savings per participating EV.<sup>3</sup> Integrating second life EV batteries, which are significantly cheaper than new batteries, into DER solutions "could provide lower cost options for displacing natural gas-fired generation" with each EV potentially resulting in "\$11,300 of savings for the electricity system when integrating DER resources to reduce Ontario's GHG emissions."<sup>4</sup> The significant amount of system benefits as a result of the wider adoption of EV batteries as DER solutions "could be shared with either EV owners, workplace buildings, or both in order to enable business models that would unlock this value."<sup>5</sup> There is potential for \$129 million per year of benefits, including \$25 million per year of potential mobile storage benefits from discharging EV batteries during the day to reduce daytime demand on the grid, displacing costly natural gas generation, and creating new night-time demand and revenue.<sup>6</sup>

Identifying and advancing DSO capabilities provides an important and necessary opportunity to transform DER and aggregators ("**DER/As**") into fully integrated, reliability-enhancing tools. A well-defined DSO framework and minimum technical requirements guidance will help to unlock non-wires solutions, increase hosting capacity, broaden compensation mechanisms, and increase customer choice and direct participation. Aggregated EVs (VPP) and V2G exports can result in significant benefits to Ontario's energy system by shifting or exporting power during peaks, including postponing or avoiding costly station and distribution system upgrades and, in return, providing benefits and reduced energy costs to EV owners. Additional revenue and/or credits lower the total cost of EV and DER ownership, indirectly accelerating wider adoption of both EVs and bidirectional charging technologies and enlarging the pool of flexible storage resources available when and where the system needs them most. Advancing DSO capabilities can further amplify these benefits by raising local hosting limits and eliminating the "first-mover" penalty that early adopters often face when interconnection causes expensive reinforcement. Accordingly, a reliable and cost-effective DSO framework is essential to capture system

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<sup>1</sup> Plug'n Drive, [EV Batteries Value Proposition for Ontario's Electricity Grid and EV Owners](#), (July 2020).

<sup>2</sup> *Ibid.*, p. 37.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*, pp. 32-33.

efficiencies, catalyze private investment in clean DER technologies, and give Ontario consumers genuine choice in how they generate, store, and use electricity.

The OEB should seek to enable simple, rule-based or program-based opportunities for DER/As including V2G, V2H, and VPPs that allow for flexibility and bi-directional chargers into the system when it is needed, including standardized hosting-capacity and connection rules that are technology-neutral and fair to all DER/As. This will enable EV owners to evaluate bi-directional opportunities and capacity requirements and/or limitations that are comparable to those for stationary energy storage systems and other DER solutions.

## **2. Evaluating Proposals and Approaches**

**The MF-DSO model is the best approach for Ontario.** DRC supports the MF-DSO model presented in the Staff Discussion Paper as it enables distribution utilities to facilitate local DER participation in wholesale markets while safeguarding system integrity. For EV owners with V2G capabilities, this model is essential for unlocking value streams, accelerating DER integration, and maintaining fairness and efficiency. As the Staff Discussion Paper notes, the distributor's primary activity remains local market administration. The forwarding of unused bids to the IESO is an incidental purpose as a by-product of optimizing distribution system efficiency, much like how local non-wires solutions can provide transmission-level benefits.

DRC agrees that the current framework already permits the proposed MF-DSO model. In addition, DRC supports identifying any legislative amendments that could provide clarity on DSO market facilitation roles. Any proposed legislative amendments should seek to ensure that LDCs maintain their neutrality while operating under the MF-DSO model, clearly outline LDC ownership and operation rules for DERs, and ensure that LDCs do not undertake resource bidding or dispatch instruction modification. The MF-DSO model is likely already a permissible distribution activity, and the OEB should focus on providing additional guidance on separation of roles and transparency safeguards. Adopting the MS-DFO model should be coupled with ensuring that any market platform developed provides equal access to third-party participants and aggregators and does not preference utility-owned DERs or programs. This approach enables a fair and competitive market that benefits market participants, utilities, and consumers.

The MF-DSO model is also likely to reduce duplication in market platforms and avoids splintered participation regimes, resulting in achieving scale in low-cost DER integration. The OEB should seek to pursue administrative simplicity when selecting and advancing a DSO model, with clear minimum technical standards and requirements within and as between each of the OEB, IESO, LDCs, and market participants, as relevant, in order to avoid the need for multiple regulatory approvals or overlapping and/or conflicting requirements. Adopting and implementing the MF-DSO model supports Ontario's energy transition and provides a largely untapped opportunity for Ontario to mobilize and benefit from innovative and emerging DER solutions, including the flexibility offered by EVs acting as dispatchable energy storage systems across and throughout Ontario's distribution system. Accordingly, DRC strongly supports the MF-DSO model with a focus on equitable access, data transparency, and performance oversight by the OEB.

**DRC supports the OEB's proposals 1 and 3.** DRC supports, in part, the proposed three-step, graduated approach to developing and advancing DSO capabilities and a DSO framework set out in the Staff Discussion Paper. However, DRC strongly favors Proposals 1 and 3 as the appropriate and effective path forward, but does not support Proposal 2.

DRC supports the establishment of a mandatory standardized assessment of distributor DSO capabilities. A system-wide, informed, and consistent approach is essential for: (i) identifying where DSO capabilities are most needed; (ii) informing strategic prioritization of grid modernization investments; and (iii) maximizing system-wide and local value in the short, medium, and long term.

DRC also supports Proposal 3, which calls for the exploration of advanced DSO models to address complex system needs, including contracting DER/A services through local flexibility markets; enabling LDCs to obtain DSO services via third-party service providers (DSO-as-a-Service); and tailoring solutions to unique local and regional circumstances.

DRC does not support Proposal 2, as it likely creates an unnecessary intermediate layer of activity that may divert focus and funding from more impactful actions. It does not meaningfully advance either visibility, interoperability, or market access for DER/As and risks slowing down Ontario's ability to meet emerging system constraints and growing demand in a cost-effective, decentralized manner.

Given the urgency of Ontario's energy transition, limited available resources should be directed to initiatives with the highest return, such as the establishment of a mandatory standardized assessment of distributor DSO capabilities and the development of advanced, scalable models. Pursuing Proposals 1 and 3 is critical to ensuring that Ontario's distribution system can adapt to rising electrification and DER adoption. In addition, DRC sees no reason why Proposals 1 and 3 cannot proceed in parallel rather than sequentially, as many LDCs have already evaluated their DSO capabilities and/or have conducted similar assessments as part of more general DER readiness assessments that could be the basis of more direct assessments of DSO capabilities.

### **3. Balancing standardization and flexibility**

Ontario needs a regulatory environment that is stable enough to invest in and integrate DER/As whenever and wherever they are most needed, including the thousands of mobile EV batteries available to provide significant and cost-effective DER solutions to meet Ontario's growing energy needs. The OEB already has significant evidence and insights from its own pilots, the OEB Innovation Sandbox, the work of the Transmission-Distribution Coordination Working Group, the Staff Discussion Paper, the DNV Report, the Non-Wires Solutions Guidelines, the Benefit-Cost Analysis Framework for Addressing Electricity System Needs, the Distributed Energy Resources Connections Review, Electric Vehicle Integration initiative, and the Distribution System Capacity Information Map. DRC submits that the OEB should pivot from continual "proof-of-concept" cycles to developing, regulating, and scaling what it already knows works, while reserving narrowly-targeted sandbox space for true unknowns. DRC submits that the learning from these initiatives, including this Consultation, supports taking action to develop and meaningfully advance the introduction of a DSO framework and evolution of the distribution utility to deliver optimal value to customers by clearly setting out expectation, minimum technical requirements, and regulatory rule and guidance regarding the introduction, pacing, and scope of new functions at the distribution level, including the roles of electricity distributors.

A standard DSO framework is no longer optional as found by both the DNV report and the Staff Discussion Paper, which warn that letting 57 distributors invent tailored solutions "is unlikely to be efficient relative to the benefits that can come with standardization".<sup>7</sup> The DNV Report notes that collective adoption of uniform DSO capability maximizes routes to market, builds supply-side

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<sup>7</sup> Staff Discussion Paper, p. 50.

confidence, “lowering the cost of market design, facilitation, and entry”.<sup>8</sup> DRC submits that uniform rules are especially critical for EV owners and aggregators whose assets travel and can be dispatched across LDC service boundaries. The Staff Discussion Paper highlights the initiatives, guidelines, consultations, projects, and partnerships that already provide insights and lessons for DER integration. Re-running similar consultations, initiatives, and pilot projects under different banners, including an expanded and prolonged version of this Consultation, risks consultation fatigue and stranded pilot data. The OEB should take the learnings and regulator experiences, provided in the DNV Report, and consider embedding successful design features (e.g., clear baselines, simplified settlement, customer confidence) and avoiding the pitfalls (e.g., over-complex local markets) that other regulators and markets have experienced in its own DSO framework and regulatory approach to advancing DSO capabilities for distributors.

#### **4. Concluding recommendations and comments**

DRC therefore respectfully recommends that the OEB :

- (a) proceed with Proposals 1 and 3 in parallel, without delay or dependent on the implementation of Proposal 2;
- (b) mandate a standardized assessment across all distributors to inform targeted, high-impact investments in DSO capabilities;
- (c) develop and publish minimum technical and operational DSO requirements, ensuring LDCs are prepared to support and enable DER/A integration; and
- (d) avoid expending resources on oversimplified interim models that may fail to deliver the required functionality or benefits at this stage of Ontario’s energy transition.

Ontario needs a modern distribution system that can reliably, affordably, and flexibly integrate DER/As, including EVs. The OEB should seek to facilitate the wide adoption of DER/A solutions across the electricity system, especially where there may be system constraints, infrastructure and economic limitations, or where energy needs are growing faster than the system can efficiently and cost-effectively meet such needs. As noted in DRC’s previous comments as part of the OEB’s transmissions connection review,<sup>9</sup> Ontario is moving toward a more decentralized and flexible electricity system that requires proactive regulatory measures to enable customer-driven investments in energy storage, demand response, and other distributed technologies. DRC continues to encourage the OEB to identify and address regulatory barriers that impact the widespread adoption of DER/As, including V2G, V2H, and VPP, participation in Ontario’s electricity system to meet growing demand for clean, reliable, and readily dispatchable energy.

Sincerely,



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<sup>8</sup> DNV Report, p. 11.

<sup>9</sup> See EB-2024-0126, [DRC Comments on proposed amendments to the Transmission System Code](#), (February 18, 2025).

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