



POWER WORKERS' UNION

September 29, 2023

Independent Electricity System Operator
1600-120 Adelaide Street West
Toronto, ON
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Via email to engagement@ieso.ca

Re: Demand Side Vision

The Power Workers' Union ("PWU") represents a large portion of the employees working in Ontario's electricity industry. Attached please find a list of PWU employers.

The PWU appreciates the opportunity to provide input on the IESO's proposed Demand Side Vision engagement. The PWU is a strong supporter and advocate for the prudent and rational reform of Ontario's electricity sector and recognizes the importance of low-cost, low-carbon energy to the competitiveness of Ontario's economic sectors.

The PWU believes that IESO processes and initiatives should deliver energy at the lowest reasonable cost while stimulating job creation and growing the province's gross domestic product (GDP). We are respectfully submitting our detailed observations and recommendations.

We hope you will find the PWU's comments useful.

Yours very truly,

Jeff Parnell
President

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List of PWU Employers

Abraflex
Alectra Utilities (formerly PowerStream)
Algoma Power
AMEC Nuclear Safety Solutions
Aptum (formerly Cogeco Peer 1)
Atlantic Power Corporation - Calstock Power Plant
Atlantic Power Corporation - Kapuskasing Power Plant
Atlantic Power Corporation - Nipigon Power Plant
Bracebridge Generation
Brighton Beach Power Limited
Brookfield Power Wind Operations
Brookfield Renewable Power - Mississagi Power Trust
Bruce Power Inc.
Canadian Nuclear Laboratories (AECL Chalk River)
Chapleau Public Utilities Corp.
Centre Wellington Hydro
Collus Powerstream
Compass Group
Cornwall Electric
Corporation of the County of Brant
Covanta Durham York Renewable Energy Ltd.
Elexicon (formerly Whitby Hydro)
Enova (formerly Kitchener-Wilmot & Waterloo North)
Enwave Windsor
Epcor Electricity Distribution Ontario Inc.
Erth Power Corporation (formerly Erie Thames Powerlines)
Erth Corporation
eStructure
Ethos Energy Inc.
Great Lakes Power (Generation)
Greenfield South Power Corporation
Grimsby Power Incorporated
Halton Hills Hydro Inc.
Hydro One Inc.
Hydro One CSO (formerly Vertex)
Hydro One Sault Ste. Marie (formerly Great Lakes Power Transmission)
Independent Electricity System Operator
InnPower (Innisfil Hydro Distribution Systems Limited)
Kinectrics Inc.
Lakeland Power Distribution
Laurentis Energy Partners
London Hydro Corporation
Milton Hydro Distribution Inc.
Mississagi Power Trust
Newmarket Tey/Midland Hydro Ltd.
North Bay Hydro
Northern Ontario Wires
Nuclear Waste Management Organization
Ontario Power Generation Inc.
Orangeville Hydro Limited
Portlands Energy Centre
PUC Services
Quality Tree Service
Rogers Communications (Kincardine Cable TV Ltd.)
Sioux Lookout Hydro Inc.

August 2023

SouthWestern Energy
Synergy North (formerly Kenora Hydro Electric Corporation Ltd.)
Tillsonburg Hydro Inc.
The Electrical Safety Authority
Toronto Hydro
TransAlta Generation Partnership O.H.S.C.
Westario Power

Power Workers' Union Submission on IESO Demand Side Vision Engagement

September 26, 2023

The Power Workers' Union (PWU) is pleased to submit comments and make recommendations to the Independent Electricity System Operator (IESO) regarding its September 20th Demand Side Vision (DSV) webinar that introduced a new initiative to engage demand side participants in the IESO Administered Markets (IAMs) and programs.

The PWU remains a strong supporter and advocate for the prudent and rational reform of Ontario's electricity sector and recognizes the importance of planning for low-cost, low-carbon energy solutions to enhance the competitiveness of Ontario's economy.

Context

The IESO's proposed DSV initiative is to establish a common DSV and set of principles to facilitate the dialogue and provide a framework to prioritize enhancement and change initiatives. The IESO expects the work to complement existing IESO engagements (e.g. DER Market Vision and Design Project, Capacity Auction) as well as provide insights for new initiatives in the future. To this end the IESO provided the following draft DSV statement:

To foster the optimal contribution of demand-side resources to a cost-effective, reliable power system while enabling consumers to manage their energy usage through the energy transition.

In the above, the PWU has underlined key elements pertaining to an *optimal cost-effective, reliable power system*. The scope of this vision is broad, indeed broader than IAMs, with the implied breadth becoming the subject of discussion during the webinar. While the IESO stated their focus in conceiving the DSV engagement was initially on such matters as hourly demand response (HDR) innovation, the IESO acknowledged that other programs contribute to similar outcomes (e.g. BTM rate program such as Time of Use (TOU), ICI, Peaksaver, CDM, etc.). The IESO is seeking feedback on the DSV and the alignment with its proposed principles, the potential role for emerging technologies that enable greater load controllability, any additional topics the IESO should consider, and whether the identified priority areas are reflective of current participation issues and challenges.

The PWU supports the principles that the IESO put forward for the engagement, most of which relate to ensuring clarity and transparency during the process. While the principles include consideration of "cost effectiveness" and "value" and the IESO emphasized the need for a positive business case to support any recommended actions, there is no mention of a benefits cost analysis to frame the costs of options and solutions. It is on this last point and in the broader context of optimally pursuing an overall cost-effective and reliable power system that the PWU offers the following recommendations:

- 1) The process for establishing business cases in support of the DSV and the IESO's accountability for producing them should be made clear and transparent in line with the other DSV principles;
- 2) Development of IAM demand side participation options should consider their cost effectiveness with respect to the broader set of behind-the-meter (BTM) initiatives being explored in the electricity sector;
- 3) The IESO should recognize that the potential for solutions to materially contribute to system reliability may not warrant IAM implementation; and,

- 4) Business cases in support of IESO initiatives should be structured to reflect the findings of the OEB's BCA process currently under development.

Recommendation #1 - The process for establishing business cases in support of the DSV and the IESO's accountability for producing them should be made clear and transparent in line with the other DSV principles.

The IESO stated that while it would follow its general stakeholder engagement principles of transparency and openness, it also put forward several principles for the DSV efforts: Equity, Accountability, Implementability, and Cost-effectiveness.

In particular, the principle of cost-effectiveness is defined as: *this work will enable solutions that are cost effective for Ontario ratepayers relative to other available options*. The principle of accountability is defined as: *the IESO is accountable for enabling the opportunities for demand side participation in the planning and operation of the Ontario grid*.

While the IESO acknowledged the need for business cases for initiatives to be undertaken, the process and principles for establishing these business cases and the associated cost effectiveness of the opportunities being enabled is not established.

These definitions for the principles of accountability and cost effectiveness support the broader scope of the DSV mentioned earlier, but many aspects of planning and operation of the Ontario grid are outside of the scope of the IESO's mandate for managing the IAMs (such as LDC operations, OEB regulations and rate programs, and other government programs).

As such, clarity is required on exactly what role the IESO will be playing in the development of business cases and alternative identification and how it intends to establish the cost effectiveness of any initiatives it may recommend.

Recommendation #2 - Development of IAM demand side participation options should consider their cost effectiveness with respect to the broader set of behind-the-meter (BTM) initiatives being explored in the electricity sector.

The PWU has consistently advocated that the most cost-effective way to advance Distributed Energy Resources (DER) integration into Ontario's electricity system, of which demand side management technologies are an element, is via rate programs not the IAMs.^{1,2}

The IESO should consider how the multiple rate programs and other government incentives will increase the pace of emissions reduction technology adoption, e.g., EVs, heat pumps and use of hydrogen.³ These technologies will have peak smoothing behaviors that will significantly impact system peaks, may achieve much of the IESO's objectives more cost-effectively, and impact the need for IAM demand response solutions:

¹ Power Workers' Union Submission on IESO York Region NWA Demonstration Project EPRI Study August 17, 2023.

² PWU Feedback to the MENMD on its Reforming the Long-Term Energy Planning Framework Consultation April 27, 2021.

³ Power Workers' Union Submission on IESO York Region NWA Demonstration Project EPRI Study August 17, 2023.

- *Bidirectional EV charging* in a Vehicle to Building (V2B) scenario without grid connection
 - o Combined with ultra-low rate programs V2B could help smooth a significant amount of demand from daytime to nighttime and encourage EV owners to use power from their EVs during the peak evening hours.
 - o GM will be providing V2B capabilities in most of its future models.⁴
- *Dual fuel heat pumps*, will provide natural gas for backup to anticipated peak heating demands. Currently, a pilot project is underway in Peterborough.⁵
- *The advent of the hydrogen economy* driven by Ontario's Hydrogen Strategy⁶ could result in an electrolysis-based, regionally distributed, demand response capability enabled by the new interruptible rate program. In future, this could help displace the need for gas-fired generation while achieving a significant rate reduction for the province.⁷

Recommendation #3 - The IESO should recognize that the potential for solutions to materially contribute to system reliability may not warrant IAM implementation.

In discussing the potential role for emerging technologies that enable greater load controllability, the IESO referred to the findings of the DER Potential Study that they commissioned in 2022. That study purports that DER has the potential to supply up to 10 GW of capacity. Analyses show that this amount is clearly overstated:⁸

- The assumptions for the accelerated scenario were contrived and are now unfounded given the IESO's procurement plans for grid connects, storage and new gas assets.
- The most value was evident for small scale residential and commercial BTM solutions, which the EPRI analysis suggests would be too hard to aggregate;⁹ and,
- The role of the OEB and other rate programs should be explored before the IESO pursues any IAM solutions.

Furthermore, the potential for EVs, heat pumps and the hydrogen economy mentioned earlier undermines the assumptions and recommendations of the IESO's DER Potential Study and these innovations may be very prevalent in the marketplace before the IESO's Market Renewal initiatives are sufficiently advanced to cost-effectively accommodate new IAM-based DSV opportunities.

The PWU has consistently advocated that the most cost-effective way to advance DER integration into Ontario's electricity system is via rate programs not the IAMs. In fact, analyses demonstrated that the IAMs are not suitable for the non-emitting energy resources that Ontario is now seeking to procure.¹⁰

⁴ [GM Unveils New Vehicle-To-Home EV Charging. But What About The Bolt?](#), Clean Technica, Aug 8, 2023. [EVs will bring 'unprecedented' power demand, but their flexibility can improve grid reliability, utilities say](#), Utility Dive, Jul 25, 2023.

⁵ <https://news.ontario.ca/en/release/1002324/ontario-launches-clean-home-heating-initiative>

⁶ Ontario's Low-Carbon Hydrogen Strategy - A PATH FORWARD, April 2022.

⁷ Strategic Policy Economics, Electrification Pathways for Ontario, 2021.

⁸ PWU submission to the IESO on the DER Potential Study, October 2022.

⁹ Power Workers' Union Submission on IESO York Region NWA Demonstration Project EPRI Study August 17, 2023.

¹⁰ Strategic Policy Economics, Electricity Markets in Ontario: An Examination of Mismatched Conditions and Options for Future Competitive Procurements, Dec 2020.

This is reflected in how the IESO altered its strategies to not rely solely on its capacity markets and other IAMs for its resource procurements and small hydro programs¹¹ in order to better tailor the requirements to the resource types being procured.

Recommendation #4 - Business cases in support of IESO initiatives should be structured to reflect the findings of the OEB's BCA process currently under development.

The OEB Framework for Energy Innovation Working Group (FEIWG) established the clear need for a benefit cost analysis (BCA) or business case to be developed when DER is considered as a solution to Dx or system needs.¹² Demand side resources are an element of DER.

The PWU provided an extensive and detailed overview of the required key elements for a benefit cost analysis and the role that the BCA should play in the overall planning processes for Ontario's electricity system.¹³

In response to the FEIWG recommendations, the OEB is now initiating a new consultation to develop a Benefit-Cost Analysis (BCA) Framework for addressing electricity system needs.¹⁴ This BCA Framework will identify the full energy system benefits and costs of Distributed Energy Resource (DER) solutions.

The scope will encompass all non-IAM implemented solutions (i.e. alternatives to IESO options) and potentially any IAM implemented solutions as well. The IESO should align its business case development processes with the approach being developed by the OEB.

Closing

The PWU has a successful track record of working with others in collaborative partnerships. We look forward to continuing to work with the IESO and other energy stakeholders to strengthen and modernize Ontario's electricity system. The PWU is committed to the following principles: Create opportunities for sustainable, high-pay, high-skill jobs; ensure reliable, affordable, environmentally responsible electricity; build economic growth for Ontario's communities; and, promote intelligent reform of Ontario's energy policy.

We believe these recommendations are consistent with and supportive of Ontario's objectives to supply low-cost and reliable electricity for all Ontarians. The PWU looks forward to discussing these comments in greater detail with the IESO and participating in the ongoing stakeholder engagements.

¹¹ PWU submission on the IESO's proposed Small Hydro Program Design, July 12, 2022; IESO, Overview and Q&A Session on the Small Hydro Program (SHP) Draft Documents, Sept 19, 2023.

¹² OEB FEIWG final report, June 2022.

¹³ PWU submission to the OEB on Considerations for Developing a DER BCA Framework, January 2023.

¹⁴ OEB Letter dated Sept 20, 2023., EB-2023-0125: Benefit-Cost Analysis Framework for Addressing Electricity System Needs.