

Feedback Form

Transmission-Distribution Coordination Working Group (TDWG) – February 27, 2023

Feedback Provided by:

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Organization: Non-Wires Solution Working Group

Email: [REDACTED]

Date: March 20, 2023

Following the February 27th Transmission-Distribution Coordination Working Group meeting, the IESO is seeking feedback on a number of questions related to transmission-distribution coordination.

Please provide feedback by March 20, 2023 to engagement@ieso.ca. Please use subject header: *TDWG*. To promote transparency, this feedback will be posted on the [TDWG webpage](#) unless otherwise requested by the sender.

The IESO will work to consider and incorporate comments as appropriate and provide responses at the next TDWG meeting. Thank you for your contribution.

Specific Questions for Comment/Feedback

Topic	Feedback
<p>TDWG Scope</p> <p>Any feedback on the IESO’s proposed continued scope for the TDWG?</p> <p>Any suggestions for additional topics for the continued scope?</p>	<p>The Non-Wires Solution Working Group (NSWG) supports the continued operation of the TDWG as there are many issues and considerations to be addressed for participation of DERs in IESO-Administered Markets (IAM) and the provision of distribution services.</p> <p>The NSWG is unclear what the IESO means by “explore options” for communication methods. We respectfully request the IESO describe the process steps for exploration including what analysis they expect to complete, what analysis they expected LDC members to complete for distribution network preparation, and what analysis DER participants are expected to complete for participation needs.</p> <p>The NSWG is concerned that the direction of the TDWG so far has focused on challenges and costs for the IESO and has not appropriately included the cost and complexities for LDCs and DER participants. For example, a method for communication that might be the most cost-effective for the IESO may be the most cost prohibitive for LDCs and/or DER participants. A total cost and complexity consideration must be included in future TDWG decision making. LDC investments require approval from the OEB including activities required to understand the current capabilities of each LDC to manage their network.</p> <p>Recommended updates to the TDWG Terms of References are attached.</p>

Topic	Feedback
EPRI's Presentation Any feedback on ERPI's presentation on T-D coordination protocol for a Total DSO Model?	NSWG has no comment.

DER as NWAs

In your assessment, how significant is the opportunity to use DER as NWA?

What do you expect the scale and pace to be? What distribution-level services do you envision emerging?

Do you have existing plans to use DER as NWAs?

In NSWG's view, the opportunity for DERs to provide Non-wires solutions is significant. Currently roughly 85% of load is forecasted by the IESO despite a large penetration of DERs including generators, energy storage, demand response technologies and smart industrial/commercial process capabilities. So far, there has been minimal to negligent consideration for NWA within IESO planning and procurements. Specifically, the IESO has utilized internal economic and capability models which are inadequate and demonstrate a lack of understanding of the scope of NWAs.

Given Ontario's hybrid market design where investments in resources (both DERs and transmission-connected) primarily occur with rate-regulated or contracted support, the scale and pace of NWAs will rely on IESO procurement activities and/or rate-regulated funding. Targeted procurement activities by the IESO as well as support for rate-regulated service agreements are required to enable DER potential (as described in detail within the IESO's DER Potential Study).

The potential for NWAs is determined by the NET cost of providing services to transmission and distribution networks. It is important to recognize that determining the net cost is a function of each individual DER and customer host. DER and customer hosts will have different views on future market revenues and direct to customer benefits (particularly for assets located at customer sites or behind-the-meter). The cost that should be included in planning economic assessments should be the net cost and not gross cost that has been used in bulk, regional and local distribution system plans. To determine net cost, a clear and procurement process that offers a financeable contract is required to enable development activity and investment actions

Topic	Feedback
	<p>for the NWA. This is outside the scope of the TDWG but is an important concept as part of determining the scale and pace of NWA potential.</p> <p>Members of the NSWG have existing plans for DERs as NWAs. The NSWG is concerned that the IESO and many LDCs have not established processes for contracting NWA services including:</p> <ul style="list-style-type: none"> • How payments would be structured • What is the term length and obligations of NWA service agreements • How services would be activated recognizing that IAM and NWA services do not need to follow the same activation, scheduling or dispatch logic • How procurement processes would notify potential NWA requirements and development activities <p>There has been limited outreach for NWA potential for specific opportunities. In particular, a financeable opportunity (i.e., a path to recover investment under an appropriate risk-reward framework) is required to enable the required investment activities to realize NWA potential. For example, regional planning does not include any DER representation as part of the team analyzing NWA potential and therefore lacks the expertise to appropriately assess NWA costs and capabilities.</p>

Topic	Feedback
<p>Alectra’s Presentation</p> <p>Any feedback on Alectra’s presentation re: a distributor perspective on protocol for Dual Participation model?</p>	<p>NSWG supports the issues raised by Alectra in their presentation. In particular, NSWG believes the following points are important consideration for the TDWG going forward: LDC jurisdiction and rate-regulated responsibilities must evolve for DER activation and supporting IAM market participation for DERs</p> <p>Clarification on DER settlement and utility cost remuneration is required, specifically the responsibilities between LDCs and IESO and identification of what OEB policy changes are needed</p> <p>The concern with LDC analytical capabilities and the potential implementation of many different approaches to managing DER participation in the IAM and offering distribution services.</p> <p>Most of the comments raised with the process steps examples in the appendix. In particular, the timeframes of the IAM and distribution services do not need to be the same. This is similar to the many different participation models the IESO has for different resources (e.g., non-quick start generation, energy limited resources, variable generation resources, etc.).</p>

General Comments/Feedback

The NSWG in earlier feedback requested examples how distributed connected resources participate in the current IAM. No example was provided and NSWG reiterates that this is an important starting point for any communication and coordination protocol in Ontario that would be recommended by the TDWG.

Transmission-Distribution Coordination Working Group (TDWG)

Terms of Reference

Overview

To support both transmission and distribution level reliability, Transmission-Distribution (T-D) coordination processes are needed to better integrate DERs in wholesale system, ~~and~~ market operations, ~~and~~ distribution networks. The IESO, Local Distribution Companies (LDCs), and DER participants will need to share information in a timely manner and ensure there is sufficient awareness (e.g., with respect to outages, limits on DERs, and dispatch of DERs, etc.) among the parties. If distribution services are also sought from DERs, then T-D coordination processes will also be needed to ensure there are no conflicting instructions, double counting, or other unintended consequences).

In this context, the IESO is launching the Transmission-Distribution Coordination Working Group (TDWG) to work closely with LDCs and other stakeholders to inform the [DER Market Vision and Design Project](#). The Project is a key focus area of IESO's DER integration activities and is what much of the near-term DER Roadmap efforts build towards. The Market Vision and Design Project is separated into two key phases. In the first phase, the DER Market Vision Project (MVP) will explore new, "foundational" participation models for DER integration into wholesale markets and will identify approaches and criteria for implementing more sophisticated models that will form the basis of future DER integration efforts. In the second phase, the DER Market Design Project (MDP) will design and implement the foundational participation models from the MVP.

These terms of reference are intended to provide guidelines for the TDWG to support effective working group sessions to meet the stated objectives.

Objectives & Deliverables

T-D coordination is a key design area for the DER MVP and a topic for which stakeholders have requested focused engagement. The TDWG will provide a forum for

in-depth engagement on T-D coordination. The objective of the TDWG is to support the IESO, LDCs, and DER participants in developing conceptual coordination protocol(s) that detail the communications among the IESO, LDCs, and DER participants in the IESO-Administered Markets and Distribution Networks by Q1-Q4 2023. ~~(when the final DER MVP report is expected to be published)~~. The coordination protocol(s) will be developed for both the Dual Participation and Total DSO coordination models, and will be shared with the IESO's broader stakeholder community through the DER MVP engagement process throughout ~~2022~~2023, prior to finalizing foundational DER participation models by Q1 2023. The conceptual coordination protocol(s) are expected to form the basis of new rules for the IESO-administered markets, LDC investment in distribution system operation, and DER service provision requirements that will need to be put in place to support the new DER participation models that the IESO has committed to implement by 2026 (i.e. the DER MDP) per the IESO's Enabling Resources Work Plan published in December 2021.

Commented [TL1]: Conceptual coordination protocols need to support all three major participants and not just the IESO.

Commented [TL2]: Communication protocols must consider IAM and Distribution Networks

Commented [TL3]: IESO to confirm timelines for DER participation model stakeholder engagement

The TDWG will be in place from Q1 2022 through Q1 ~~2023~~2024. If there is follow-on work beyond this timeline, the IESO may, in consultation with TDWG members, establish new objectives and extend the TDWG beyond Q1 ~~2023~~2024. If so, the ~~IESO-TDWG members~~ will specify in writing the new objectives and extended duration for the TDWG efforts.

Deliverables

The following are guidance for deliverables for the TDWG. The TDWG expects that the final form of the deliverables will evolve throughout the TDWG work:

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1. Identify visibility requirements for distribution networks to support communication and coordination protocols.
 - o Consider potential for phased implementation by voltage class (e.g., 44 kV sub-transmission first)
 - o Describe visibility need from day-ahead to real-time time period.
2. Determine appropriate standardization for assessing distribution system capability and DER limits.
 - o Standardization may consider time periods (e.g., daily, hourly, dispatch interval), deliverability metric (i.e., MW or MVA), and service standard (e.g., dispatch interval, hourly product, unique activation service)
3. Recommended communication protocol for DER service provision to IAM and Distribution Network
 - o Communication protocols to consider managing planned and unplanned outages, DER delivery point transfers and DER capability derates.
4. Recommendations for DER participation timelines for both IAM product services and distribution service products
 - o Consideration provided for different timelines for DERs to offer services to the IAM and distribution networks.
5. Determine legislative, regulatory and code changes required to implement communication and coordination protocols.
 - o Consideration of rate-regulated funding requirements and timelines.

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All deliverables should be assessed with consideration for implementation cost, complexity and timelines for the IESO, LDCs and DER participants.

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Commented [TL4]: Recommendation that deliverables be clearly outlined for consistent understanding

Commented [TL5]: Costs for all participants must be considered, what might be cost-effective for the IESO may be prohibitively expensive for LDCs and DER participants

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Membership

Membership on the working group is open to representatives of distribution and transmission companies as well as other stakeholders with knowledge of grid operations, planning and/or DER integration. Membership of the group will include active members as well as observers.

Expectations of active members include:

- Contribute to materials development and review materials in advance of meetings
- Actively participate in scheduled meetings and contribute to discussion topics
- Bring forward perspectives/relevant initiatives from respective organisations
- Commitment to problem solving, collaboration and exchange of ideas

Representatives from the Ontario Energy Board, Ministry of Energy, and Natural Resources Canada will attend TDWG meetings as observers. Observers will have the opportunity to contribute to discussions but will primarily attend for informational purposes.

A list of the TDWG's membership is provided in the Appendix.

Organization and Administration of Meetings

- Notice of meetings will be provided at least one month in advance. Meetings are expected to take place on a quarterly basis. Additional ad-hoc meetings may also be held as necessary. All meetings will be held virtually.

Commented [TL6]: A draft schedule for TDWG meeting should be established now for 2023 to allow better scheduling and organization.

Commented [TL7]: More than a quarterly basis, likely consider monthly to reduce length of meetings and manage multiple deliverables

- IESO staff will chair and facilitate the meetings.
- Meeting materials will be made available to the working group at least one week in advance of meetings. Materials will be posted on the IESO's TDWG engagement page.
- The IESO will take meeting notes with a focus on actionable items and their resolution.
- Draft meeting notes will be available ~~within two weeks~~ within 48 hours following a meeting in order for TDWG members to review.
- Members will have three weeks to provide feedback following a TDWG meeting (via the IESO's standard Feedback Form).
- The IESO will finalize the meeting notes upon receipt of feedback. Final meeting notes, including any accompanying written submissions from TDWG members, will be posted on the engagement page within one month of a meeting.
- Meetings will ~~not~~ be recorded and shared with TDWG members. Only the meeting notes and other materials, as deemed necessary by the IESO, will be posted to the TDWG engagement page.
- Members and the IESO may, from time-to-time, be requested to provide written submissions to support their positions in order for all TDWG members and the IESO to clearly understand the merits of the issue at hand and any solution being proposed. Members, including the IESO, will be asked to provide the submissions within two weeks in these instances.
- In some instances, members may be requested to share confidential or proprietary information of their respective organizations to investigate issues. In these instances, feedback will be summarized and/or aggregated to protect any confidential information.
- The IESO will maintain an ongoing issues and resolution document to track issues raised by the TDWG and record how the issue was resolved. The document will be reviewed as part of each TDWG meeting.
- [NTD: Decision making criteria]

Commented [TL8]: IESO should consider third-party facilitation to assist managing discussion to enhance productivity. Alternatively, facilitator from IESO should not be presenter.

Commented [TL9]: This has not been met, the draft schedule should indicate when materials will be made available.

Commented [TL10]: AI meeting note takers can record real-time conversation that can be shared with all members immediately. The TDWG should adopt this approach to produce a transcript of the meetings.

Commented [TL11]: 2 weeks is far too long to produce meeting notes. At that point it will be difficult for members to review and comment on differences in meeting outcomes. IESO must deliver meeting notes promptly after meeting if they are solely responsible for chairing and facilitating the TDWG.

Commented [TL12]: There is no reason why the meetings cannot be recorded.

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Commented [TL13]: TDWG members should discuss how decision making will be done for recommendations from the working group

Appendix – Membership List

Organization	Representative	Member Status
Independent Electricity System Operator (IESO)	Ali Golriz (Chair) Dina Shoukri (Vice-Chair)	Active
Ontario Energy Board (OEB)	Raj Pattani Chris Cincar	Observer
Ministry of Energy	Bryan Pelky Ryan Zade Kirby Calvert	Observer
Natural Resources Canada (NRCan)	Thomas Levy	Observer
Toronto Hydro	Hani Taki	Active
Entegrus Powerlines Inc	Matthew Meloche	Active
Hydro One	James McGowan Dr. Muhammad Mueen John Penaranda	Active
Alectra Utilities	Bob Braletic Fanny Guevara	Active
Energy + Inc	Umar Waqas	Active
Oakville Hydro and Oakville Enterprises Companies	Jeff Mocha	Active
Essex Powerlines Corp	Imtiaz Ahmed	Active
Enwin Utilities Ltd.	Jim Brown	Active
Hydro Ottawa	Raed Abdullah	Active
Halton Hills Hydro Inc.	Alex Grypstra	Active
Elexicon Energy	Faisal Habibullah Muhammad Usman Khalid	Active
Electricity Distributors Association (EDA)	Abdul Muktadir Kathryn Farmer Brittany J Ashby	Active
Grand Council Treaty #3	Michelle Shephard	Active
Anwaatin Inc.	Don Richardson	Active
Survalent	Young Ngo	Active
Opus One	Marco Wong Dina Subkhankulova	Active
Open Access Technology International, Inc. (OATI)	Farrokh Rahimi	Active
I-EMS Group Ltd	Ashkan Rahimi-Kian	Active
Energy Storage Canada, AEMA and CanREA	Travis Lusney	Active
Peak Power	Nikola Saric	Active
Versorium Energy Ltd.	Chris Codd	Active
Quanta Technology LLC	Elli Ntakou	Active
Guidehouse	Pedro Torres-Basanta	Active
Powerconsumer Inc.	Adam White	Active

Ryerson University	Bala Venkatesh	Active
University of Waterloo	Kankar Bhattacharya	Active
Electric Power Research Institute (EPRI)	Majid Heidarifar Tanguy Hubert	Active