

FEBRUARY 27, 2023

Transmission-Distribution Coordination Working Group (TDWG) – February Meeting

Inna Vilgan, Advisor, System & Sector Development
Ali Golriz, Lead, System & Sector Development

Today's Agenda

- TDWG feedback summary and continued scope (IESO) – 20 min
- T-D coordination protocol for a Total DSO model (EPRI) – 45 min
- Break – 15 min
- Transmission and Distribution Electricity Planning in Ottawa (Hydro Ottawa & IESO) – 45 min
- A distributor perspective on protocol for Dual Participation model (Alectra) – 30 min

Past TDWG Meetings

- Meeting #1: Introduction to TDWG, introduction to Transmission-Distribution (T-D) coordination, overview of Distributed Energy Resources (DER) Scenarios & Modelling Study
- Meeting #2: T-D interface working definition, WG feedback discussion, Distribution System Operator (DSO) models in scope, additional detail re: DER Scenarios & Modelling Study
- Meeting #3: Energy Systems Integration Group (ESIG) “override” example, IESO outage processes, and timing of relevant participant-facing IESO Market Renewal processes
- Meeting #4: Local Distribution Company (LDC) outage notifications, distribution Non-Wires Alternatives (NWA) service pilot, Joint Utilities of New York’s DSP Communications and Coordination Manual
- Meeting #5: Draft conceptual T-D coordination protocol for Dual Participation Model, DER Market Vision Project (MVP) T-D Update, D-D coordination
- Meeting #6 (today): Conceptual T-D coordination protocol for a Total DSO model, Transmission and Distribution Electricity Planning in Ottawa, A distributor perspective on protocol for Dual Participation model

TDWG Member Feedback

1. Are the IESO's recommendations for T-D coordination appropriate for foundational models? Do any recommendations involve risk for distributors that would inhibit DER(A) participation in wholesale market?

Feedback

(1/3) At present, the proposal excludes local distribution companies as market participants. Coordination protocols should reflect the possibility that LDCs can and do act as market participants.

(2/3) Strongly agreed that rate-regulated distributors should not represent IESO market participants. The separation of wholesale market activities and rate-regulated activities is extremely important to ensure that Ontario rate-payers are ring-fenced from merchant risk exposure.

IESO Response

Response to comments 1-3: Distributor participation in IESO markets is subject to legislation (the OEB Act) and regulatory interpretation of that legislation.

A T-D coordination protocol for a Total DSO model will be presented at today's TDWG session. Also, in the May 2022 TDWG session, an approach referred to as "DSO Aggregator Model (A Hybrid DSO Model)" was recognized.

The Dual Participation and Total DSO models capture two "bookend" approaches. It is expected that the conceptual T-D protocols that have been developed as part of the TDWG could be adapted for other approaches.

The IESO has worked with the TDWG to prioritize the development of conceptual T-D protocols for the Dual Participation model as it can be enabled in the near-term ...

TDWG Member Feedback

1. Are the IESO's recommendations for T-D coordination appropriate for foundational models? Do any recommendations involve risk for distributors that would inhibit DER(A) participation in wholesale market?

Feedback

(3/3) Preferably the liability for DER(A) activities in IESO-Administered Markets (IAMs) should be held by the owner of the DER(A) (e.g., the aggregator/flexibility provider / technical integrator), not the distributor or the local market operator.

The presentation provides a good *market* model, but the T-D coordination model is incomplete. As per the Terms of Reference for this group, all valid T-D communication protocol models should be reviewed by the working group.

IESO Response

... considering it generally reflects the current role of regulated LDCs, aggregators and DER owners in Ontario's electricity system (while enabling coordination of DER being used for distribution level and wholesale services). Furthermore, enabling the Dual Participation model is not expected to involve upgrades to core IESO dispatch tools. The IESO is also working with the TDWG to develop a conceptual T-D protocol for a Total DSO model to be responsive to requests from some TDWG members and to recognize that there are multiple potential ways that roles and responsibilities may be divided in the future.

Thank you for this feedback. At today's TDWG session, the IESO is proposing that continued scope related to methods of communication and a "sharing platform" be added to the Terms of Reference, consistent with this feedback.

TDWG Member Feedback

1. Are the IESO's recommendations for T-D coordination appropriate for foundational models? Do any recommendations involve risk for distributors that would inhibit DER(A) participation in wholesale market?

Feedback

IESO Response

Agreed that enhanced communication protocols are needed to ensure the three main parties (i.e., IESO, DERs, Distributors) understand the capabilities of the system and services being delivered. Similar to other system constraints (e.g., transmission system outage), distribution system outages must be integrated into the real-time schedule and dispatch.

Thank you – consistent with this feedback, the conceptual T-D coordination protocol for a Dual Participation model presented at the Nov 9, 2022 TDWG session includes consideration for distribution system outages.

It would be helpful if high level diagrams or process flows could be developed and reviewed so the working group can easily assess the options. The sub-processes, specifically regarding the management of constraint analysis results, will also need to be discussed.

Feedback will be considered for future TDWG session materials.

TDWG Member Feedback

2. Any feedback on Hydro One's Distribution-Distribution Coordination presentation?

Feedback

IESO Response

The options presented by Hydro One are supported. The complexity of Ontario's unique distribution system ownership and operations structure are recognized.

Thank you for this feedback.

Coordination between IESO, Transmitter, Distributor, and DER(A) is critical. The path of information for offers/bids, dispatches, and system constraints should be organized to provide a single source of truth. Separately, development of ICCP links between IESO, Transmitter, and Distributor could help with constraint automation. It is valuable to explore what information can be shared.

Thank you for this feedback. At today's TDWG session, the IESO is proposing that continued scope be added to the Terms of Reference, consistent with this feedback.

TDWG Member Feedback

2. Any feedback on Hydro One's Distribution-Distribution Coordination presentation?

Feedback

Consider the benefits of parallel communications between all parties. Benefits are seen in establishing a process for distributors to (in addition to the DER(A)) also inform the IESO of distribution constraints as a verification step.

IESO Response

Thank you for this feedback. At today's TDWG session, the IESO is proposing that continued scope be added to the Terms of Reference, consistent with this feedback.

TDWG Member Feedback

3. Does the draft conceptual T-D protocol for the Dual Participation model presented provide the opportunity for sufficient coordination among parties? Are there any gaps/concerns with the draft T-D protocol presented?

Feedback

IESO Response

Will the Dual Participation model be evaluated against the Total DSO model?

An assessment of the functional requirements to enable both the Dual Participation and the Total DSO models will be provided at the next TDWG session.

The working group should be given an opportunity to openly discuss the merits and challenges of each model.

However, a broader comparison of the economic, environmental and societal impacts (e.g. impact on all Ontario ratepayers, impact on competition/participation in grid services, impact on decarbonization/electrification goals, etc.) is beyond the scope of the TDWG and the IESO's mandate.

Related to "the DER(A) Service Provision Considered", does the IESO only consider Non-Wires Alternatives (NWA) (i.e., congestion management) from distribution DER(A) or other services such as voltage control and balancing as well?

The conceptual T-D coordination protocol presented at the Nov 9, 2022 TDWG session only contemplates the use of DER as non-wires alternative (NWA) to distribution network infrastructure (in addition to wholesale market participation) to address planned/forecasted distribution system constraints (e.g. overload or voltage issues due to load growth/peaks).

TDWG Member Feedback

3. Does the draft conceptual T-D protocol for the Dual Participation model presented provide the opportunity for sufficient coordination among parties? Are there any gaps/concerns with the draft T-D protocol presented?

Feedback

IESO Response

The definition of short-notice, reserve-type service to an LDC must be defined clearly for all parties. If the short-notice reserve-type service is no longer required by an LDC outside of the lock-up period (i.e., T-2 hours before real-time), a DER should be able to adjust their offer to participate in the IAM.

The conceptual T-D coordination protocol for Dual Participation model presented at the Nov 9, 2022 TDWG session does not provide an opportunity for DER(A) to change offer/bids in the real-time market (RTM) after the IESO's mandatory window deadline (2 hours before the dispatch hour).

The T-D protocol presented might be expensive for LDCs, and the province to implement, as many new dedicated communication paths would need to be established, rather than leveraging existing communication paths.

Thank you for this feedback. At today's TDWG session, the IESO is proposing that continued scope be added to the Terms of Reference, consistent with this feedback.

TDWG TOR Mandate

As stated in the TDWG Terms of Reference (TOR):

- Objective of the TDWG is to support the IESO in developing conceptual coordination protocols
- Detail communications among the IESO, LDCs, and DER participants in the wholesale market
- Coordination protocols will be developed for both the Dual Participation and Total DSO models
- New rules for the IESO-administered markets are expected to be formed based on coordination protocols in support of new DER(A) participation model(s)
- The IESO's DER Market Vision and Design Project is expected to introduce new DER(A) participation model(s) by 2026
- The IESO may, in consultation with TDWG members, establish new objectives and extend the TDWG beyond Q1 2023

Continued TDWG Mandate

- With today's TDWG sessions, conceptual protocols have been developed and presented for both the Dual Participation and Total DSO models, detailing coordination among the IESO, LDCs/DSOs, and DER(A) in the wholesale market
- The IESO is proposing continued scope for the TDWG in order to:
 - Explore options for the method for communication to enable the conceptual T-D protocol(s)
 - Explore the use of a "sharing platform" as a "one-stop shop" to enable the conceptual T-D protocol(s)
- The IESO will consider TDWG members feedback on continued scope and present a revised Terms of Reference at the next TDWG session

Feedback Questions

1. Any feedback on the IESO's proposed continued scope for the TDWG? Any suggestions for additional topics for the continued scope?
2. Any feedback on ERPI's presentation on T-D coordination protocol for a Total DSO Model?
3. 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?
4. Any feedback on Alectra's presentation re: a distributor perspective on protocol for Dual Participation model?

Next Steps

- Please use the feedback form found under the February 27 entry on the [TDWG webpage](#) to provide feedback and send to engagement@ieso.ca by March 20
- The next TDWG meeting is expected in April and will include a presentation on LDC/DSO functions under the Dual Participation and Total DSO models