Energy Transformation Network of Ontario (ETNO) Meeting Support Materials February 26, 2020

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Agenda Item 1
Energy Transformation Network of Ontario

A group of senior leaders from across Ontario's utility, business and non-profit/government sectors working together to drive a more efficient, affordable electricity system in Ontario

ETNO's primary objective is to:

> *"Guide the transformation taking place in Ontario's energy sector and to seek to optimize outcomes for the benefit of all Ontarians by influencing tangible policy, market and regulatory enhancements with near and long term benefits"*

Agenda Item 1 (continued)
Energy Transformation Network of Ontario

Works in six-month Work Sprints to tackle specific issues and provide recommendations to key decisions makers:

CEO of the Independent Electricity System Operator (IESO)

CEO of the Ontario Energy Board (OEB)

Deputy Minister of the Ontario Ministry of Energy, Northern Development and Mines (MENDM).

Agenda Item 3 IESO as ETNO Sponsor

The Independent Electricity System Operator (IESO) is a sponsor of ETNO

As a sponsor, the IESO provides staff support, facilitation services, and meeting space

The IESO supports ETNO's primary objective and sees value in the effort to discuss and reach consensus positions on how to address key sector challenges and to encourage coordination between the policy, regulatory and market spheres

Agenda item 4 Overview of Latest ETNO Report

DER growth is continuing as a result of policy and consumer drivers

There are key customer and system benefits that can be derived from coordinating the integration of DERs

New options for roles and responsibilities within the distribution sector are emerging that could be used to achieve this coordinated integration

Decisions are needed on how these roles should be allocated and coordinated

Structural Options from Latest ETNO Report

Figure 5: Today's roles in Ontario

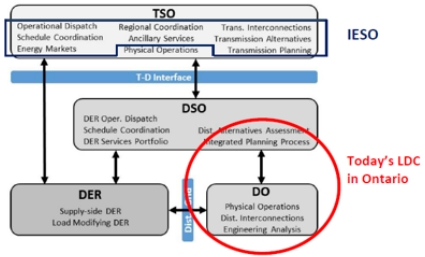


Figure 6: Policy concept – load-serving entities

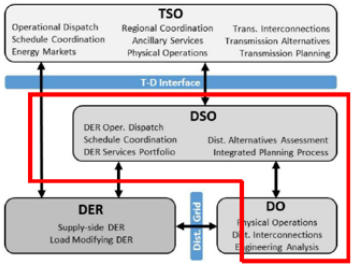


Figure 7: Policy concept – community choice aggregation models

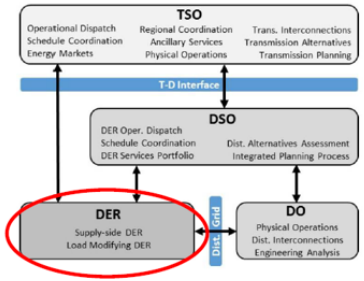


Figure 8: Policy concept – all-encompassing distribution companies

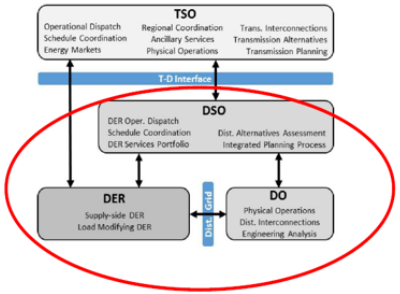


Figure 9: Policy concept – enforced separation of functions between distribution system operators and owners

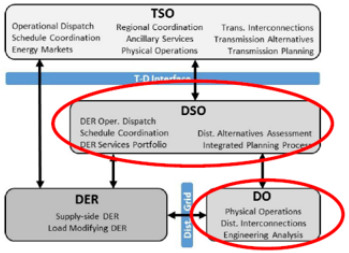
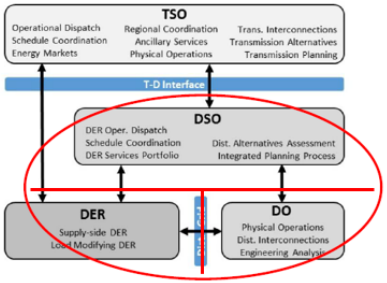


Figure 10: Policy concept – regulated separation approach



Key Conclusions from Latest ETNO Report

However responsibilities for DERs are allocated, accountabilities for electricity system reliability, security and resiliency must be clear

Open standards for connecting DERs to the distribution system and open access to DER markets are essential to prevent artificial monopolies that would stifle consumer value

Undertaking an objective, cost-benefit analysis of structural options described in the report should help guide policymakers in determining how roles and responsibilities for DERs may be allocated to maximize benefits for Ontario consumers

Agenda Item 5 ETNO Work Plans

ETNO will produce a Work Plan each year

The Work Plan will set out one or two topics that ETNO will seek to address over the course of a year

Each topic will be addressed via a six-month work sprint by a working group of staff volunteered from member organizations

Larger, more complex topics could/would be broken into smaller components to fit into the six-month progress/delivery cycle

Agenda Item 5 ETNO Work Plans continued

Each work sprint will culminate in the production of a report/suite of recommendations on how to address the specific topic

The intended audience of the recommendations will be policy, regulatory and market decision makers

2020 Work Plan: Topic Selection

A list of potential topics for 2020 is included in the next slide

A preliminary discussion of these topics was held by ETNO last Fall

Members may also propose other critical issues that they believe need immediate near-term address in the sector and are not being addressed in another forum

Goal for today's meeting is to select which topic(s) ETNO will pursue in 2020 and establish a working group to address the work

The decision on which topics to address rests with Members

2020 Work Plan: Potential Topics See appendix A for detailed descriptions of topics

Potential Topic	Description
Enabling access to Dx system information	Standards for providing access to information such as: peak demand, load shapes, load forecasts, hosting capacity, congestion, frequency or voltage issues, infrastructure plans, to enable DER investment decisions
Alternative approaches to accessing customer meter data for DR	Recommend approach to enhancing access to customer meter data for DR aggregators
Standardized Interconnection Processes for DER	Recommend approach to standardize/ rationalize processes across Ontario (note related OEA and OEB work)
Ensuring fairness if LDCs permitted to expand DER ownership/operation	Outline changes to Affiliate Relationship Code (ARC), other policy, regulatory tools to ensure competition/fairness for all DER providers and optimal outcomes for customers
Enabling LDCs as distribution system operators (DSOs)	Recommendations to ensure LDCs can provide necessary services/recover costs if they evolve to DSOs (note related OEB work)
Evaluate options to increase buy-side competition in electricity markets	Objective evaluation of models for increasing buy-side competition (e.g. LSE, retailers) in Ontario context
Roadmap for Dx system restructuring	Lay out specific steps/timelines for Distribution system reforms needed in high-DER future (continuing work from last ETNO report)
Stranded costs vs. fully depreciated assets	Options for if, when, and how a customer should contribute to the cost of existing assets in light of DER deployment
Financing models	Meeting future electricity needs that stimulate new sources of investment and competition

2020 Work Plan: Meetings

ETNO is expected to meet up to eight times per year. Four of these meetings will be in-person and four will be via teleconference

In-person meetings will be approximately 2 hours
Teleconferences will be approximately 1.5 hours

ETNO meetings will be timed to enable Members to provide direction to any Working Groups struck to undertake a six-month Work Sprint. Each Work Sprint is proposed to include:

Two months of issue discovery
Two months of solution development
Two months of recommendation development/documentation

Meetings for the second half of 2020 will be scheduled in May 2020 and may include changing the time of meetings or the overall number of meetings, pending feedback from Me

2020 Work Plan: Meetings

ETNO Meeting #	Date	Time	Type	Purpose of meeting
1	February 26, 2020	8:00 – 10:30 AM	In-Person	• Discuss DRAFT 2020 Work Plan • Discuss any Member proposals for additional Work Plan topics • Determine deliverables for next meeting • Determine Working Group membership (which organizations can volunteer staff)
2	April 15, 2020	8:00 – 10:30 AM	In-Person	• Review deliverables assigned at first meeting – provide guidance/course correction for solution development phase • Review and discuss draft solution proposals • Identify outstanding information and analysis needed to refine solutions
3	May 28, 2020	8:00 – 9:30 AM	Teleconference	• Review and discuss draft recommendations • Provide guidance for finalizing recommendations
4 w/Decision Makers	June 25, 2020	8:00 – 10:30 AM	In-Person	• Share recommendations with Ontario's policy, regulatory and market leaders

Agenda Item 8 Working Group

Established by Members – drawn from Members themselves, or, staff from Member organizations

Carry out the technical and analytical work of ETNO in order to provide options for consideration to Members

Guided by the strategic direction provided by Members

Agenda Item 9 Next Steps

- Distribute meeting notes with discussion outcomes
- Distribute DRAFT 2020 Work Plan reflecting the two topics determined at today's meeting
- Members to provide any feedback on DRAFT 2020 Work Plan
- Finalize 2020 Work Plan
- Working Group meeting to delegate accountability for work/deliverables determined at today's mee

Appendix A Potential Topics: Access to Data

- Access to data has been an ongoing issue within Ontario's electricity sector and has not been effectively resolved by the existing policy/regulatory/market framework.
- Gaps exist in terms of the types of data available, the process for accessing data, and the utility of the data that is accessible
- Improving access to data and transparency of information is considered a keystone of enhancing competition in the sector and creating a level playing field amongst participants

Appendix A Potential Topics: Access to Data continued

- Could provide tangible benefits related to the creation of new products and services, achieving conservation and energy efficiency targets, visibility of resources, system reliability, planning and forecasting, and the costs of electricity supply

Access to Data: Customer Data

- Fragmentation exists between entities that collect different segments of customer meter data (e.g. Smart Metering Entity (SME), LDCs). No regulatory framework exists enforcing the release or standardization of data.
- LDCs are not incentivized to make data available. Investments are likely required to facilitate access in a meaningful way.
- The SME's ability to make data available, or collect data from larger customer classes, is limited by provincial regulation which scopes the SME's activities to collection of data from smaller customers for billing purposes.

Access to Data: Customer Data continued

- Challenges with customer adoption have been raised with "front runner" approaches from other jurisdictions (e.g. Green Button).
- Ability to better access customer data could support new products and services, better targeted energy efficiency and demand response, and DER aggregations participating in wholesale markets (or future distribution level markets).

Access to Data: Dx System Data

- Distribution system data is currently controlled by LDCs with limited access for external third parties.
- LDCs generally not incentivized to make data available. Investments are likely required to facilitate access in a meaningful way.
- Broader access to distribution system data could facilitate several benefits, including allowing third parties to better target DER solutions to specific parts of the grid both to potentially alleviate existing issues or develop services for LDCs, and also to avoid problem areas (e.g. congested areas).

Access to Data: Dx System Data continued

- Access to distribution system information would become even more important if competitive distribution level capacity and energy markets were to develop in the future.

Access to Data: Tx System / Market Data

- Stakeholders have called for increased access to data (e.g. hosting capacity, loading on transmission nodes, zonal demand forecasts, geolocation of transmission assets) as well as greater transparency for planning methodologies, models and assumptions.

- Access to enhanced data brings economic and security concerns which may need to be addressed.

Access to Data: Tx System / Market Data continued

- Similar to issues with access to distribution system data, better access to data for the transmission system and wholesale markets could improve business planning and project siting decisions for market participants, as well as enhance stakeholder's ability to evaluate planning decisions being made by the IESO.

Access to Data: DER Data

- DERs expected to continue being deployed in increasing numbers over time and their operation, especially when coordinated as aggregations, could cause negative impacts to the grid if LDCs and the IESO lack visibility.

- Investments likely required on the part of LDCs and the IESO to accept and use this data.

- Gaining visibility (for LDCs, IESO) of the location and operations of DERs will improve the accuracy of bulk and local level system planning as well as the efficiency of wholesale markets (and distribution level markets if they emerge in the future).

Potential Topics: Role of LDCs

- In the face of a changing landscape involving the proliferation of DERs and changing consumer demands, LDCs are faced with a lack of legislative and regulatory clarity regarding how they are and are not permitted to respond

Role of LDCs: Permitted DER Related Activities

- Key debate related to proliferation of DERs is whether regulated LDCs should be permitted to own and operate DERS
- Lack of clarity within existing legislative and regulatory frameworks is cited as key barrier to LDC and 3rd party adoption/deployment of DERs
- ETNO could seek a consensus position on permitted DER related activities for regulated LDCs vs unregulated affiliates

Role of LDCs: Evolution beyond Distributors

- A series of policy considerations were explored in ETNO's latest report, *Structural Options for Ontario's Electricity System in a High-DER Future,* however, a consensus position was not reached on a recommended path forward (i.e. which model(s) would make the most sense to enable in an Ontario context)

- ETNO could seek to evaluate the benefits and challenges of a transition toward the various different system architecture models described in the paper

Role of LDCs: Evolution beyond Distributors continued

- This work could include a recommended path forward to enable LDCs to transition toward one or more of the models, incorporating a timeline of legislative, regulatory and potentially market changes that would facilitate the transition

Role of LDCs: Requirements for Local Markets

- Ontario is piloting the ability of distributors to design and operate local energy and capacity markets for the purposes of using DERs as Non-Wires Alternatives (NWAs)
- Supporting policies and frameworks would likely need to be introduced alongside local markets to facilitate their design and efficient operation including (e.g. access to data, connection, new regulatory oversight, transparent market rule amendment process)
- ETNO could seek to recommend which complimentary structures and rules would need to be established alongside any local markets

Role of LDCs: Requirements for Local Markets continued

- Within this discussion, ETNO could evaluate and recommend an approach to whether LDCs should be permitted to own and operate DERs that participate in markets that they administrate, and the principles governing this type of activity, if permitted

Thank You

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