

Unlocking Value in a Changing Sector

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Purpose

- To provide IESO perspectives on the principles, objectives and areas of focus for the OEB's consultations on Utility Remuneration and Responding to Distributed Energy Resources (DERs)



Introduction

- The increasing prevalence and potential of DERs is changing the energy landscape in Ontario and elsewhere
- New and challenging questions are arising about how the sector should evolve to plan for, secure services from and operate DERs in order to maximize their value to the system
- IESO commends the OEB for launching the Responding to DER and Utility Remuneration consultations
 - Consultations will provide an important forum for exploring questions related to sector evolution
- IESO has a strong interest in these proceedings as they impact our core mandate to **reliably and efficiently** operate the grid and administer the wholesale markets

IESO DER Initiatives



IESO Purview

Increase competition and demonstrate DER capabilities

Shared Purview*

Explore new roles and responsibilities and enhance interoperability

**Shared between IESO, OEB and LDCs
Additional details on initiatives provided in appendix*

Coordinating IESO and OEB Initiatives

- The Utility Remuneration and Responding to DERs consultations relate closely to a number of IESO initiatives and are impactful to the entire sector
- The IESO believes, and has heard from stakeholders, that there is a need for transparent coordination between the IESO, OEB and other stakeholders
- Through the Innovation Roadmap and Work Plan, the IESO has provided a transparent, collaborative path for its DER initiatives
- DER related efforts at IESO are being pursued through open, public discussion*
 - E.g. through engagement forums like the Energy Storage Advisory Group and research efforts like the Innovation and Sector Development whitepaper series
- The IESO welcomes these OEB consultations as another opportunity to share IESO perspectives and hear from others on DERs and sector evolution

**Links to IESO initiatives provided in appendix*

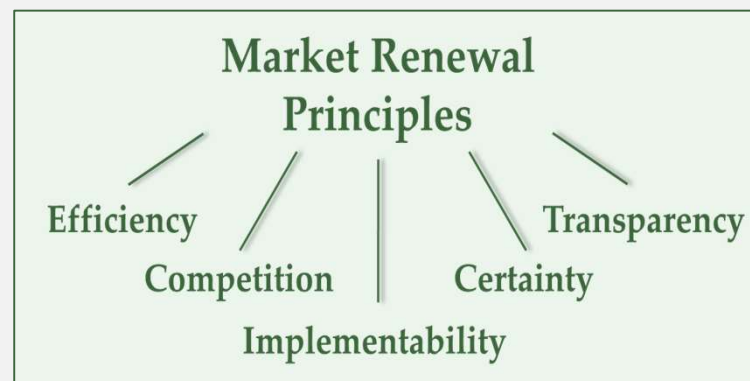
Principles: Include Competition and Transparency

- The IESO generally supports the “OEB Staff List of Potential Guiding Principles”
- OEB principles broadly align with those recently established or contributed to by the IESO (e.g. *Market Renewal*, *ETNO**)

The IESO recommends adding two additional principles

1. **Competition:** Robust competition is essential to achieving efficiency, cost-effectiveness, customer value and customer choice
2. **Transparency:** Open, transparent engagement forums are needed to address the complex challenges of DER integration and sector evolution

Principles from Past IESO Initiatives



Energy Transformation Network of Ontario *Objectives for a High-DER Future*



* *Energy Transformation Network of Ontario*

Objectives

IESO encourages the OEB to pursue the following objectives:

Responding to DERs

- Provide signals for investment and operation of DERs that align with the value of the services they provide
- Identify and address regulations that unnecessarily limit the ability of DERs to provide wholesale and distribution services
- Seek opportunities to improve collection and dissemination of data to support planning, operations and enable consumers and third parties to create value for consumers

Utility Remuneration

- Determine the appropriate role of LDCs and others for DER integration at the distribution level from a starting point of consumer interests and ratepayer value
- Enable cost-effective and competitively procured Non-Wires Alternatives including energy efficiency and DERs
- Enable fair competition in the provision of distribution level services

General

- Act on near-term opportunities while being mindful of long-term implications



Focus Areas

Through its DER related initiatives, the IESO and its stakeholders have identified a number of focus areas for OEB consideration in these consultations

Responding to DERs

- Storage/DERs in OEB Codes
- Interconnection
- Rate Design
- Other Regulations Impacting DER Development
- Value Stacking
- Energy Payments
- Distribution System Data

Utility Remuneration

- LDC Roles and Responsibilities
- DER Ownership
- Non-Wires Alternatives (NWAs)
 - Planning
 - Procurement
 - Payment

Focus Areas – Responding to DERs (1 of 2)

Storage/DERs in OEB Codes

- The IESO's Energy Storage Advisory Group identified instances where review or clarification of OEB codes would be beneficial for the storage community
 - Examples include the application of transmission and distribution charges to energy storage and the use of forecast revenues from distribution and transmission rates as an offset to connection costs
- The IESO's 2019 Operability Assessment identified the need to incorporate the new IEEE 1547-2018 standard into the Distribution System Code

Interconnection

- Existing interconnection requirements may be overly burdensome and impose prohibitive costs on smaller resources, limiting their ability to compete in the wholesale markets
- The IESO acknowledges and supports the OEB's efforts to identify barriers and standardize and improve the connection process through the DER Connections Review

Rate Design

- Appropriate alignment between electricity rates and wholesale market incentives will be necessary to drive efficient investment and operational decisions for DERs



Focus Areas – Responding to DERs (2 of 2)

Other Regulations Impacting DER Development

- The IESO encourages open dialogue between the OEB and stakeholders on existing regulations that may provide unnecessary barriers to DER development

Value Stacking

- DERs can provide value at multiple levels (e.g., behind-the-meter, distribution system, wholesale markets) discussion of which services a single resource can provide would be beneficial

Energy Payments

- The IESO's Market Renewal Program will introduce locational prices for energy for market participant generators
- Discussion of how to compensate non-market participant DERs for energy injection (i.e. based on a province-wide or locational price) is warranted

Distribution System Data

- The IESO believes that the provision of accurate, timely, and relevant information helps to drive efficient outcomes
- The IESO encourages conversation through this consultation on the types of distribution system data that would be beneficial to the sector and how that data might best be shared

Focus Areas – Utility Remuneration (1 of 2)

LDC Roles and Responsibilities

- In a future with higher volumes of DERs and/or new distribution level services, new or enhanced planning, operations, and market functions will be required
- Discussion of how utilities should be remunerated must consider what functions they should/should not fulfill
- Exploration of what distribution level services will be enabled (e.g., NWAs, voltage control, etc.) should inform discussion

DER Ownership

- The IESO administered markets are directly impacted by decisions on whether electricity services are subject to regulated monopoly or competitive forces
- If competition is a key principle for sector evolution, as the IESO believes it should be, significant attention on how to enable fair competition at the distribution level is required
 - Discussion on what is required to enable third-parties to compete to provide distribution services should be in scope
 - Review of the Affiliate Relationship Code to determine its effectiveness in separating regulated and non-regulated functions should be considered
 - Discussion of open access rules for DERs and DER aggregations at the distribution level should be considered

Focus Areas – Utility Remuneration (2 of 2)

Non-Wires Alternatives

- Investment in energy efficiency and/or DERs is an increasingly viable option to defer or avoid expenditures on transmission or distribution infrastructure
- Through the IESO's Regional Planning Process communities have expressed a preference for non-wires solutions to meet growing local demand
- A number of regulatory questions should be considered to unlock the value of NWAs:
 - What approaches should be considered to provide a level playing field between wires and non-wires solutions?
 - How should a resource's NWA value be stacked alongside other potential services?
 - What mechanism(s) should be considered to procure NWAs?
 - Who should plan for, procure and operate NWAs?
 - To whom should the costs of NWAs be allocated?
 - Should communities have the option to pay a premium for a non-wires solution?
- The IESO encourages the OEB to include discussion of NWAs and practical near-term approaches to enabling them within the scope of these consultations

Conclusion

- The IESO appreciates the opportunity to provide input into the Responding to DERs and Utility Remuneration consultations and we look forward to continued involvement in these important initiatives



APPENDIX



Initiatives – IESO Purview

Exploring Expanded DER Participation in the IESO Administered Markets (IAMs)

- White papers identifying potential options for increased DER participation in the wholesale markets (e.g., through new aggregation models, min. size threshold) – 2019
- Evaluation of options and prioritization against other potential IESO projects – 2020+

Technical Demonstration Projects

- Pilot projects to test the ability of DERs to provide system services or to test options to remove barriers to DER participation (e.g. metering requirements) – 2019+

Demand Response (DR) Enhancements

- A range of initiatives, explored through the Demand Response Working Group, to help ensure DR is delivering its full potential and in a position to meet Ontario's future capacity needs – 2019+

Enabling Storage

- A range of potential initiatives to better integrate storage into the IAMs, potential efforts span from clarification of existing market rules to DSO changes – 2019+

IESO Focus: increase competition and demonstrate DER capabilities

Initiatives - Shared Purview

Barriers to Implementing NWAs in Regional Planning

- Subcomponent of Regional Planning Review Process focused on identifying barriers for NWAs and options for addressing barriers – 2019

Transmission-Distribution (T-D) Interoperability and NWA Markets White Papers

- White papers exploring potential roles and responsibilities and approaches to T-D interoperability in a high DER future – 2019

IESO York Region NWA Demonstration Project

- Pilot project to demonstrate procurement and operation of DERs to meet both local and bulk system needs – 2019-2022

Grid-LDC Interoperability Standing Committee

- Forum for exploring risks and opportunities related to coordinated operation of Ontario's electricity system and increasing awareness of changes at both the grid and distribution levels – 2019+

Electricity Transformation Network of Ontario (ETNO)

- Forum for exploring electricity sector evolution and policy level questions associated with DERs; future structure and focus are currently under discussion – 2019+

*Initiatives relate to work within purview of IESO, OEB and LDCs
IESO Focus: explore new roles and responsibilities and enhance T-D
interoperability*

Links to IESO Initiatives

- Energy Storage Advisory Group
<http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Energy-Storage-Advisory-Group>
- IESO Operability Assessment
<http://www.ieso.ca/en/Sector-Participants/IESO-News/2019/06/IESO-publishes-Operability-Assessment-to-2025>
- Demand Response Working Group
<http://www.ieso.ca/sector-participants/engagement-initiatives/working-groups/demand-response-working-group>
- Sample Technical Demonstration Projects
 - Grid Innovation Fund: [Project Portfolio](#)
 - [Alternative Technologies for Regulation Phase 3](#)
 - [Phase 1 and Phase 2 Energy Storage](#)
- Innovation and Sector Evolution White Paper Series
<http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Innovation-and-Sector-Evolution-White-Paper-Series>
- Grid-LDC Interoperability Standing Committee
<http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Standing-Committees/Grid-LDC-Interoperability-Standing-Committee>
- Innovation Roadmap
<http://ieso.ca/en/Get-Involved/Innovation/Innovation-Roadmap>
- Innovation Roadmap Work Plan
<http://ieso.ca/en/Get-Involved/Innovation/Projects>