Hydro Ottawa's Views on DSO Opportunities, Objectives, and the Framework Ahead

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Presentation Outline

- Opportunity & Policy Objectives
- Existing Foundations & LDC Progress
- Evolutionary Approach
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Opportunity & Policy Objectives

- Hydro Ottawa is aligned to the strategic opportunities and high-level policy objectives for DSO capabilities, recognizing their potential for Ontario's energy evolution.
- We commend the OEB Staff and DNV reports for providing a strong and thoughtful foundation, particularly in outlining the critical regulatory and legal considerations.
- Our direct experience from the forefront of grid operations offers a valuable, complementary perspective: we see significant opportunities to build upon this foundation by integrating the profound technical nuances essential for successful DSO implementation and evolution.

Recommendation: We advocate for future OEB consultations to focus on deeper technical discussions, involving LDC operations and regulatory, to collectively ensure optimal reliability and robust consumer protection as DSO capabilities advance.

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Existing Foundations & LDC Progress

Hydro Ottawa is taking proactive steps towards grid modernization

Advanced Systems

Investing in ADMS, DERMS, and AMI 2.0 for superior grid control and visibility.

Non-Wires Solutions (NWS)

Developing NWS programs to solve congestion and defer infrastructure upgrades.

Advanced Planning

Using dynamic load forecasting and disaggregation to predict and manage demand

Collaboration & Integration

Partnering with the IESO and participating in innovation pilots like EV Everywhere.

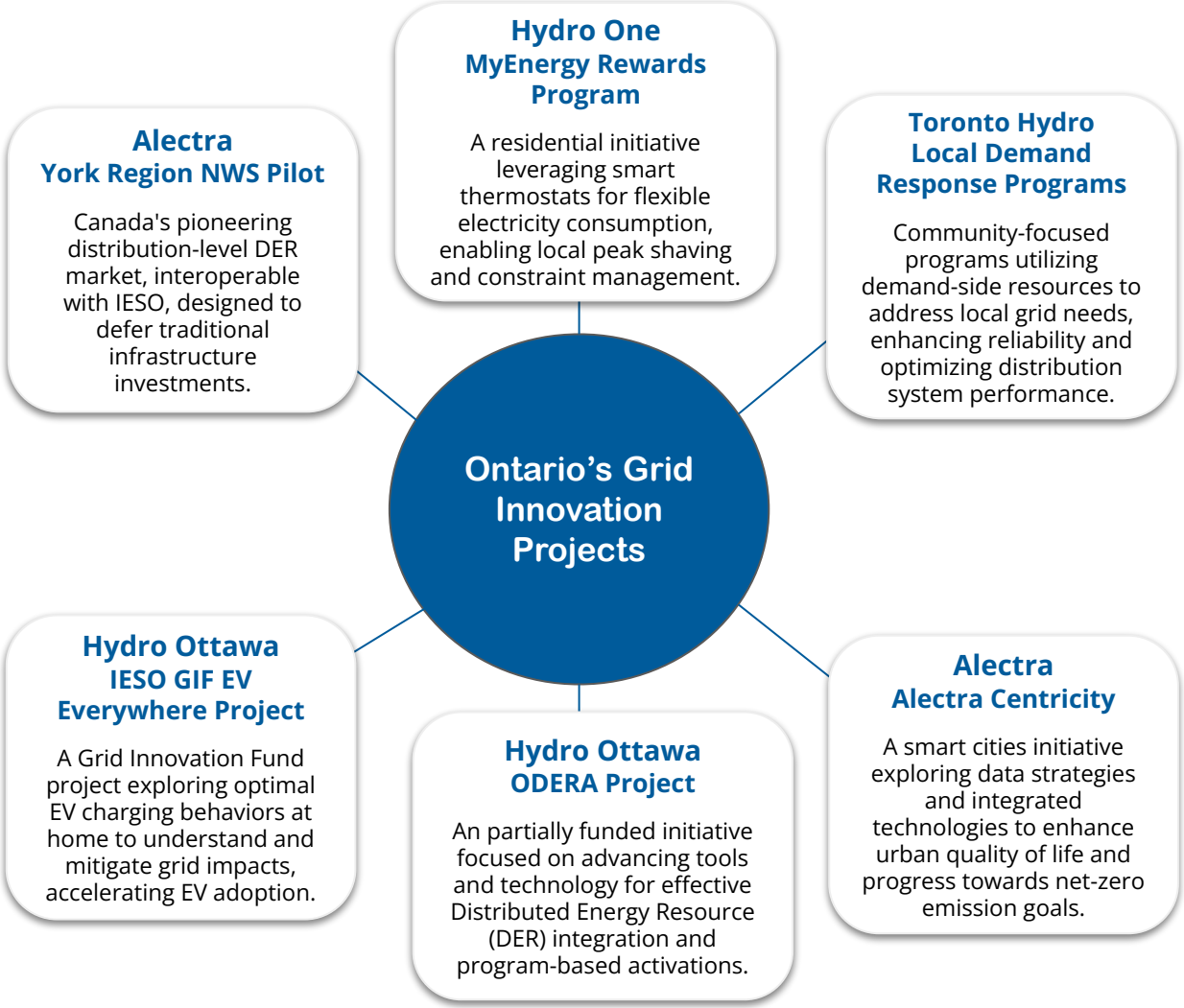
Business Case Analysis

Leveraging BCA frameworks (DST & EST) to validate the economic viability of NWS.

IRPP Process

Using the Integrated Regional Resource Planning process to review NWS viability.

Hydro Ottawa's activities represent significant investments that provide concrete, real-world insights into LDC readiness and the tangible technical complexities of DSO capabilities.



Existing Foundations & LDC Progress

Ontario LDCs are actively innovating under the existing legislation

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Enabling the Evolutionary Path

A strong foundation is in place to build upon

Foundation: Significant foundational building blocks are now in place, reflecting substantial LDC and rate payer investments, numerous innovation projects, and extensive collaborative work and consultations (e.g., BCA Framework, NWS Guidelines, Framework for Energy Innovation, IESO-led TDWG)

Proposed End State: Achieving maximum DER value, reliability, and consumer protection requires an integrated approach: LDC-led orchestration and holistic coordination of all DERs across the wholesale and distribution systems.

Recommended OEB Focus: Gain a comprehensive understanding of the diverse current state of LDCs (gathered through targeted technical surveys, strategic readiness assessments, and direct LDC engagement). Subsequently define the desired end state vision and develop a roadmap to advance Ontario DSO capabilities.

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Enabling the Evolutionary Path

LDC Remuneration

Remuneration Review: OEB and LDCs must assess the sufficiency of current mechanisms (e.g. FEI Margin on Payments).

OpEx Recovery: LDCs require consistent understanding of cost recovery for operational expenditures related to foundational grid modernization tools.

Establish PIM Applicability: Explore Performance Incentive Mechanism framework for the DSO.

Hydro Ottawa Recommendation: Establish a joint OEB-LDC Dedicated Working Group to transparently quantify gaps and propose new, shared mechanisms, with consideration to include other stakeholders such as DER providers and aggregators.

Proposal 1 - Aligned

A focus on standardized tools and assessments

No Regret Activities: Foundational grid modernization tools (eg ADMS, Load Forecasting) are a necessity of distribution activities and could be provided by DSO-as-a-Service

Standardized Tools and Assessments: Integrate standardized tools and assessments for evaluating the need for DSO capabilities into the Chapter 5 filing requirements. LDC's are already actively identifying NWS opportunities by leveraging the BCA framework and actively pursuing grid modernization

Advancing Planning Capabilities: Crucially, LDC planning tools must evolve to incorporate DER and Demand-Side Management (DSM) dynamically and risk-adaptively to enable Non-Wires Solutions (NWS).

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Proposal 2 - Not Aligned

Several critical technical and strategic deficiencies

Compromised Reliability & Operations

Exacerbates coordination gaps and creates a technical "blind spot," leading to potentially reliability risks and congestion impacting service quality.

Hindered Efficiency & Innovation

Perpetuates a fragmented market lacking essential technical standards, undermining cost-effective DER integration and delaying sophisticated local flexibility markets,

Customer Confusion

The unintegrated approach to DER activation could create confusion and frustration for consumers, eroding trust and hindering informed energy choices.

Compromised Reliability & Operations

Absence of quantifiable "tipping points" or a clear roadmap for advancing DSO capabilities limits strategic investment pacing and long-term maximisation.

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Proposal 3 - Aligned

A focus on interoperability and coordination

Address Critical Coordination Gap

Resolves critical 'lack of coordination' between wholesale DER activations and distribution grids. Establishes paramount **interoperability** and T-D coordination.

Enables True Market Enablement

Establishes robust 'local flexibility markets' for **cost-effective grid solutions**. Transitions from program-based mechanisms to integrated, market-driven optimization.

Maximizes Value & Economic Efficiency

Unlocks substantial **DER value** with low implementation cost relative to 4.1 GW DER capacity opportunity (IESO's 2022 DER Potential Study). Optimizes DER utilization across wholesale and distribution grids.

Aligns with Core Policy Objectives

Ensures strong alignment with OEB policy objectives, particularly **consumer protection and grid reliability**, through transparent, technically coordinated operations. Advances 'quality of electric service'.

Leverages Existing Technical Investments

Optimizes **existing technical investments** (ADMS, DERMS, planning systems). Integrates current assets into a unified, future-proof grid architecture

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Promotes Adaptability & Future-Readiness

Cultivates a **technically adaptable framework** for evolving grid complexities and increasing DER penetration. Ensures long-term grid resilience and fosters continuous innovation.

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Proposal 3 - Aligned

Aligned with Market Facilitator (MF-DSO) Model

- **Functional Separation is Sufficient:**
  - Hydro Ottawa aligns with the MF-DSO model, which effectively utilizes **functional separation** (distinct operations within the same legal entity) to achieve its objectives.
- **Technical Coordination is the Priority:**
  - Our immediate urgency is centered on establishing granular **technical standards, market design, and seamless coordination** between wholesale and distribution grids, which functional separation can adequately support.
- **Legal Separation Not Currently Required:**
  - For the MF-DSO model, full legal separation is **not deemed an immediate or necessary requirement** under the current regulatory framework.
- **Avoidance of Premature Costs and Complexity:**
  - Pursuing legal separation at this stage would involve **substantial costs, significant complexity, and legislative changes** that are disproportionate to the current needs of the MF-DSO model. These resources are better directed towards urgent technical implementation.
- **Future Consideration for Advanced Models:**
  - While legal separation may be a relevant consideration for the **long-term evolution** towards more extensive DSO models (e.g., Total DSO), it is not a prerequisite for advancing Ontario's grid modernization through the MF-DSO approach.

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Conclusion

- **DSOs is a Present Necessity, Not a Distant Future:**
  - Hydro Ottawa, as an LDC on the front lines, views DSO capabilities as a critical need driven by immediate capacity constraints, not a theoretical future concept.
- **Technical Complexity is Paramount:**
  - While regulatory and legal frameworks are important, the technical complexities of implementing and evolving DSO capabilities are often underestimated and must be the primary focus moving forward.
- **Reliability and Consumer Protection are Core:**
  - The biggest policy objective and opportunity for DSOs is to mitigate immediate and growing reliability risks caused by uncoordinated wholesale market activations of DERs impacting local grids.
- **Evolutionary, Technically-Informed Approach:**
  - An evolutionary path is appropriate, but it must be guided by granular technical coordination, LDC visibility into DER operations, and expedited learning from leading LDCs.
- **Market Enablement for Cost-Effectiveness:**
  - True economic efficiency and DER value maximization will come from robust market enablement and interoperability between wholesale and distribution levels, rather than simplified, fragmented models.

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Recommendations

- **Embrace an Integrated, Technically-Driven Evolution:**
  - Recognize DSOs as a **present necessity** driven by immediate grid needs and capacity constraints, not a distant concept.
  - Prioritize **technical discussions** and detailed implementation planning.
- **Avoid Simplistic & Fragmented Approaches (Proposal 2):**
  - Steer clear of models that exacerbate coordination gaps and create technical "blind spots."
  - Do not perpetuate fragmented market structures that compromise reliability and economic efficiency.
- **Build on Existing LDC Progress (Proposal 1):**
  - Leverage existing **grid modernization investments** and proactive LDC efforts.
  - Support the development of **standardized assessment tools** and **risk-based planning frameworks** to accelerate sector-wide evolution.
- **Champion Advanced, Market-Enabled Solutions (Proposal 3):**
  - Focus on establishing robust **interoperability** and **Transmission-Distribution (T-D) coordination**.
  - Enable **local flexibility markets** to maximize DER value and foster innovation.

Overall Recommendation:

- Hydro Ottawa advocates for a strategic, technically-informed evolutionary path that prioritizes real-time coordination, market enablement, and consumer protection to unlock the full potential of DERs for Ontario's grid.

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Thank You