Enhancing Relationships With LDCs

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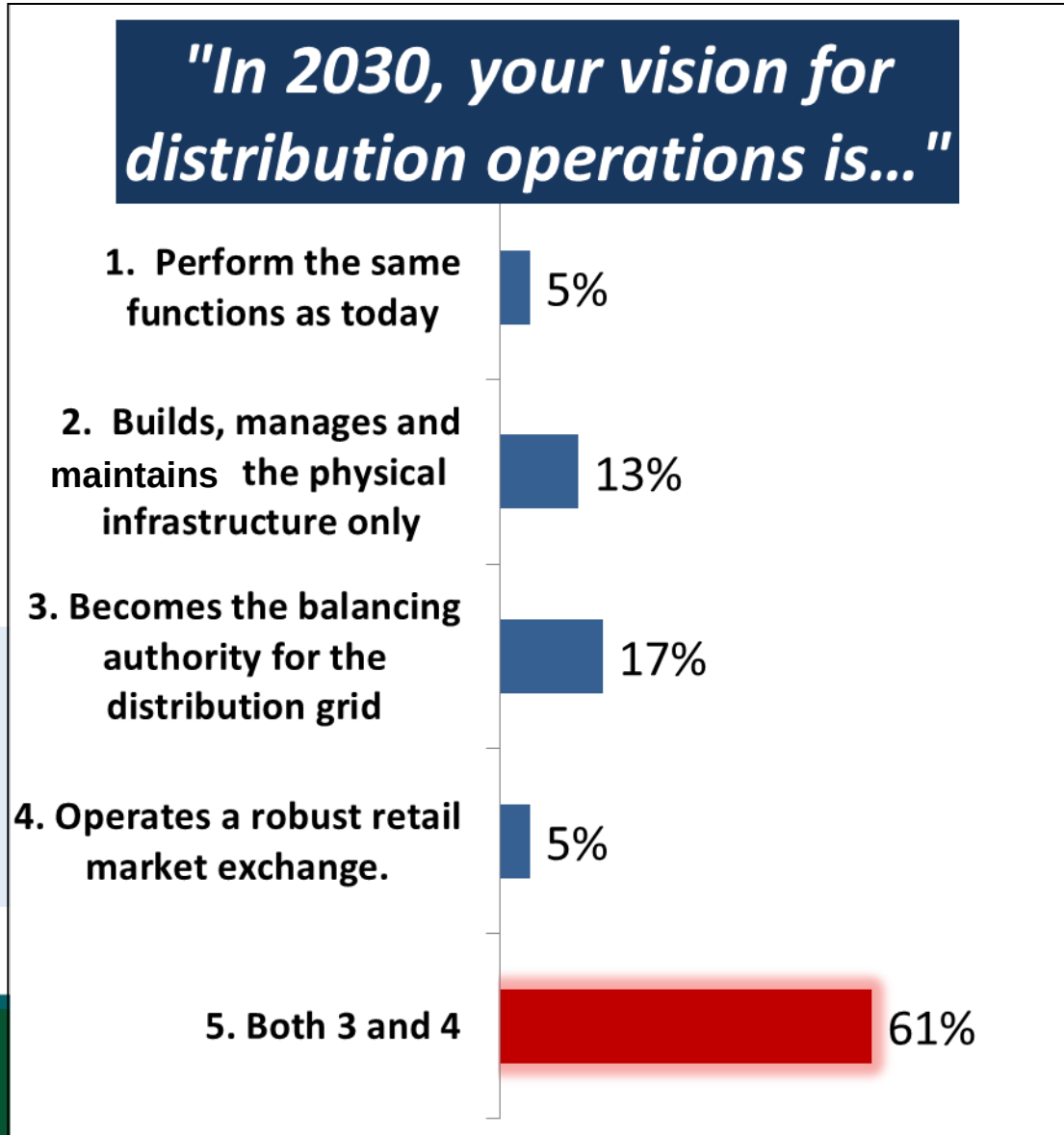
Distribution sector – where next?

A recent survey points to a growing consensus that the distribution sector is about to change dramatically.



Based on a survey conducted of 240 U.S. executives from utilities, government, regulatory bodies and other third-party providers of energy-related goods and services.
Source: Gridwise Alliance "*The Future of the Grid: Evolving to Meet America's Needs - Final Report*", December, 2014

Today, several pressure points are being brought to bear on the distribution sector...

- **Technological**:
  - Distributed Energy Resources (DER) are getting better, cheaper, and their rate of adoption is accelerating
- **Commercial:**
  - Emergence of Third Party Services providers
  - Erosion of demand - Ontario Average Consumption per Customer has been roughly cut in half over the last ~10 years
- **Operational:**
  - More customers making sophisticated, independent decisions about generating, storing and using electricity.

The regulatory construct that has governed the distribution sector for decades never contemplated any of this!

Perspectives....

Today, most utilities view DER as "disruptive challenges" rather than opportunities.

Interstate Renewable Energy Council *"Easing the Transition: The Changing Roles of Consumers, Utilities and Regulators Within the Regulatory Compact"*

The threat to the centralized utility service model is likely to come from new technologies or customer behavioral changes that reduce load. Any recovery paradigms that force cost of service to be spread over fewer kWh enhance the ongoing competitive threat of disruptive alternatives.

Edison Electric Institute "*Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business"*

Decoupling revenue from consumption? ...the debate comes to Ontario

The Board believes that a fixed rate design for recovery of electricity distribution costs is the most effective rate design for ensuring that rates reflect the cost drivers for the distribution system and best responds to the current environment.

Ontario Energy Board *Draft Report of the Board, Rate Design for Electricity Distributors 2014*

GEC {Green Energy Coalition} is concerned that the proposed move to a 100% fixed charge for electricity distribution rates will undermine the Conservation First agenda, reducing CDM {Conservation and Demand Management} effectiveness and/or increase its costs of delivery and unfairly subsidize larger, wealthier customers at the expense of smaller, less affluent ratepayers.

Green Energy Coalition submission to the Ontario Energy Board, "Re: EB-2012-0410 – Rate Design for Electricity Distributors – GEC submission" June 3, 2014

IESO Perspectives...Bruce Campbell @ Ontario Energy Network Luncheon (26 Jan 2015)

- LDCs could be most impacted by electricity sector change.
- …we need to do some serious thinking about how fast-evolving technologies and a more engaged consumer base will redefine our roles, our responsibilities and our relationships.
- Flexible, reliable, and resilient – highly valued qualities – and being provided from the LDCs both to their customers and to the system. Can we imagine our LDC business models evolving to take on the associated roles, responsibilities and relationships?
- So yes – I believe we have the vision to drive big change.

IESO Perspectives...Bruce Campbell @ Ontario Energy Network Luncheon (26 Jan 2015)...cont'd

- …with an increasing portfolio of supply and load resources embedded in our LDCs, there will need to be protocols developed to better co-ordinate LDC operations with IESO operations.
- Our world needs to evolve to one of a more coordinated or integrated model of distribution and transmission decision making, resulting in more intelligent solutions for the consumer -- and that needs to happen soon.
- We'll be looking to get started quickly with one or more of the LDCs with embedded supply and load resources to figure out the best way those resources can help both organizations.

Next Steps in Ontario... different levels of engagement

- We'll be exploring potential areas of coordination between LDCs and the IESO within the area of near-term planning and real-time operations:
  - one-way communication from IESO to LDC
  - two-way communications between LDC and IESO

Potential elements - one-way communication from IESO to an LDC

- Public Appeals
- MaxGen or MinGen Alerts
- Extreme Conditions Alert
- Demand Response activations
- IESO-initiated voltage reductions
  - Testing and real-time activations
- IESO forecast for embedded solar and wind generation
  - LDCs are experiencing problems with feeder loadings, particularly when planning outages and switching
- Storm/high risk conditions
  - LDCs could use this information to deploy crews pre-emptively to areas where severe storms are tracking

Potential elements - two-way communication, including some sharing of operational data

- Share embedded variable generator (VG) forecasts
- Share data to support VG forecasts
  - for example…IESO works with LDCs to set up and use a small solar panel as a proxy for all solar generation in the territory
- Share information about other embedded generators
  - For example…behind the meter load displacement generation
- Coordinated dispatch of storage facilities
  - Many storage facilities will be connected at distribution voltages. There may be a need and value to coordinating dispatch to satisfy distribution and transmission system objectives
- Sharing information about LDC load profiles that, combined with embedded generation information, increase the accuracy of IESO power system models
- LDC-initiated voltage reductions for peak shaving