



Serving the Customer Yesterday, Today, and Tomorrow: The Promise of AMI

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Presentation Overview

- Hydro One Overview
- Serving Our Customers Yesterday...
- Serving Our Customers Today...
- Hydro One's Smart Network Vision
- Serving Our Customers Tomorrow...
 - Transmission and Distribution Modernization: Smart Grid
 - Customer Enablement
 - Distributed Generation Integration
 - Enhanced Outage Restoration
 - Distribution System Reliability and Ops



Hydro One

Ontario's Largest Electricity Delivery Company



Customers served	1,200,000
Area served	640,000 sq. km
Transmission lines (high-voltage)	28,500 km
Underground cable	272 km
Distribution lines (low-voltage)	122,830 km
Transformers	520,000
Low-Voltage Wood poles	1,600,000

Serving Our Customers...Yesterday

- Just three short years ago we...
 - Read most customer meters every three months... and cottages only once per year
 - Provided estimated bills on months they were not read
 - Relied on customers to tell us when the power was out... and when it was restored
 - Had no way to remotely monitor or operate equipment on our distribution system to serve our customers
 - Provided customers only with usage comparison tables which were confusing due to estimates.
 - Performed work through paper processes requiring employees to pick up and report on work at the office



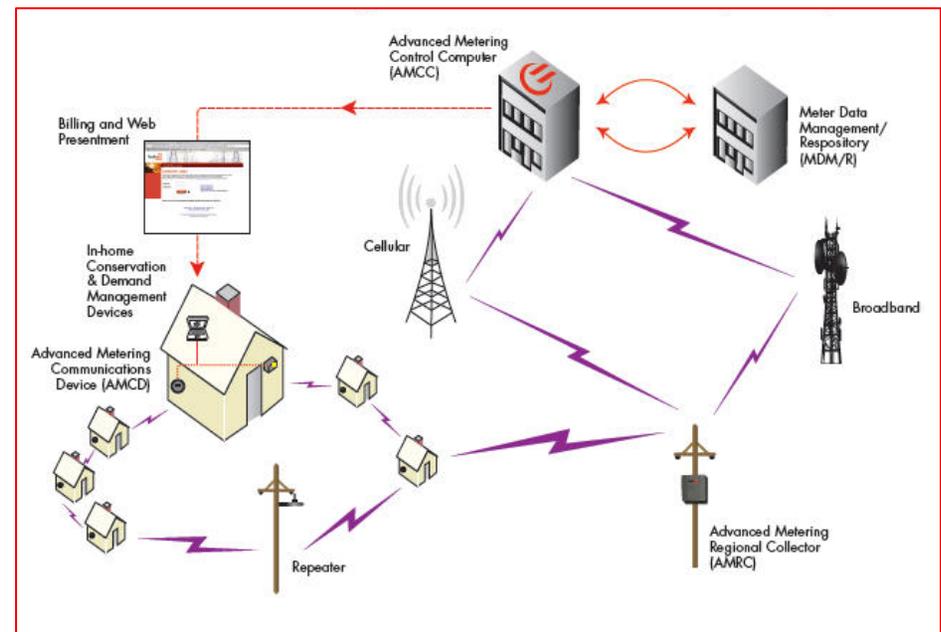
Serving Our Customers...Today

- Today, we have...
 - Greater than 1 million smart meters installed across the province
 - Equipped with “last gasp” capability to improve outage management practices
 - Have over 300K customers on automated meter reading (and climbing monthly)
 - Customers are getting bills based on actual consumption for the billing period
 - Rolling-out Time-of-Use prices beginning in January and providing consumers with access to their consumption information online the day after they use it
 - The communication infrastructure (and related spectrum) to begin to building the smart distribution system of the future... enabling renewable distribution and improved service to our customers.



Hydro One Smart Meter/Network Vision

- Deploy a smart meter/network solution that meets Ontario Ministry of Energy & Infrastructure requirements at the lowest possible cost and is an enabler for other business processes and transformations
- A cost effective, secure, and robust communication infrastructure is key... and so is interoperability:
 - Internet Protocols
 - Standards
 - Secure
 - Non-proprietary



Serving Our Customers...Tomorrow

“The use and production of electricity is changing. Consumers are becoming more aware of environmental impacts of the electricity system and are seeking greater ability to manage their electricity use to control costs...Today, the grid is primarily a vehicle for moving electricity from generators to consumers. Tomorrow, the grid will enable two-way flows of electricity and information as new technologies make possible new forms of electricity production, delivery, and use.”

Enabling Tomorrow's Electricity System

Report of the Ontario Smart Grid Forum

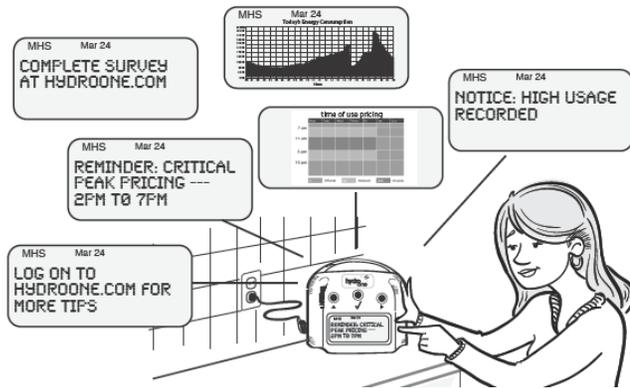


Serving Customers...Tomorrow

- Build out and test distribution modernization scenarios to trial technologies and gather the data to prove out business cases:
 - Roll out key enablers (Wimax, GIS)
 - Trial technologies
 - Realize mandated programs (Green Energy Act, Conservation and Demand Management, etc.)



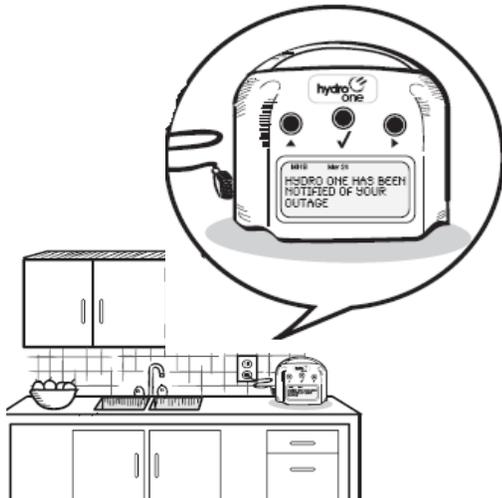
Serving Customers Tomorrow... Distribution Modernization Scenarios



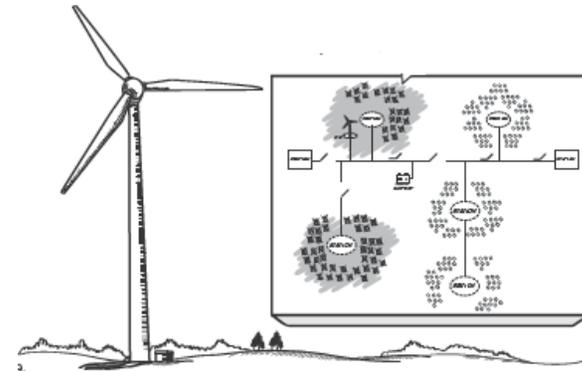
Customer Enablement



Distribution System Management



Improved Outage Restoration



Distributed Generation Automation 9

Conclusion

- We've come a very long way in just three short years
 - Over 1 million meters installed (90% of customers)
 - Better customer billing practices (no more estimated bills), better price signals (TOU), and improved access to information (online access to usage information)
- The foundation is in place to begin testing distribution modernization scenarios realizing improved customer service, greater efficiency, and Ontario Green Energy Act requirements... but there remains much thinking and work to be done
- We are very pleased to be a sponsor of this important conference to share experiences and advance thinking in this truly transformational time in the electricity industry in Ontario

