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A WORLD OF INTELLIGENCE – AMI 2.0 HAS ARRIVED

PowerLogic Users Group (PLUG) Conference

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ieso
Connecting Today. Powering Tomorrow.

IESO - Who We Are and What We Do

Reliably operate Ontario's province-wide system 24/7

Work closely with communities to explore sustainable options

Create electricity market efficiencies

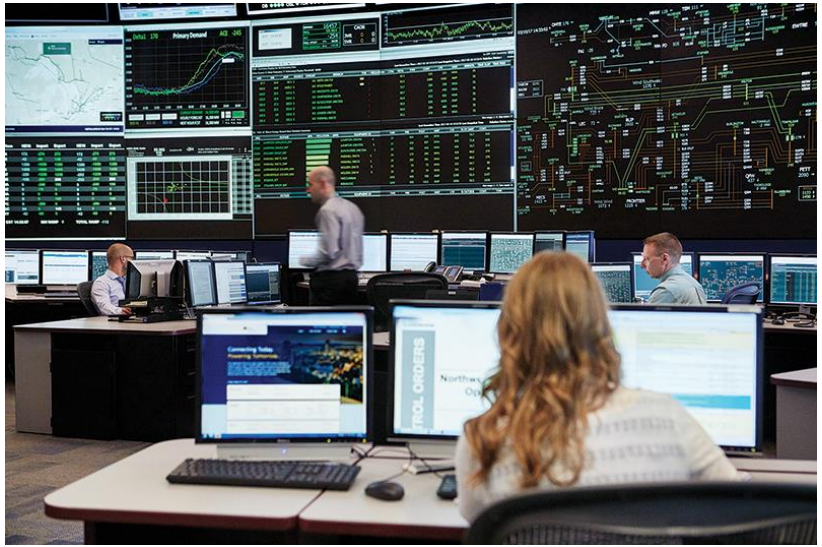
Enable province-wide Conservation

Plan for Ontario's future energy needs

Ontario's designated Smart Metering Entity

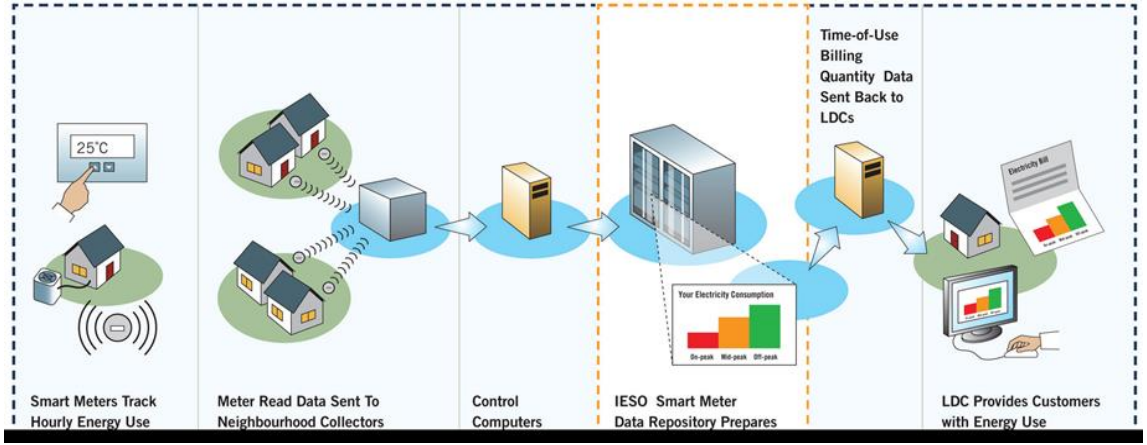
Key Electricity Trends in Ontario & Beyond

- Demand for electricity is on the rise
- Existing and new resources will be required to avoid shortfalls
- Technological evolution can support the energy goals of municipalities, Indigenous communities
- Local energy solutions are being tested
- Interest in decarbonization continues to grow, particularly among municipalities



Ontario's Smart Metering System

- One of the largest shared service system in North America and the world, supporting Ontario's utilities billing of residential and small commercial customers.
- Reliably processing and managing consumption data from ~ 5.3 million smart meters (120 million+ records every day) and creating value from data & analytics.



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Making the Most of the Smart Metering Data

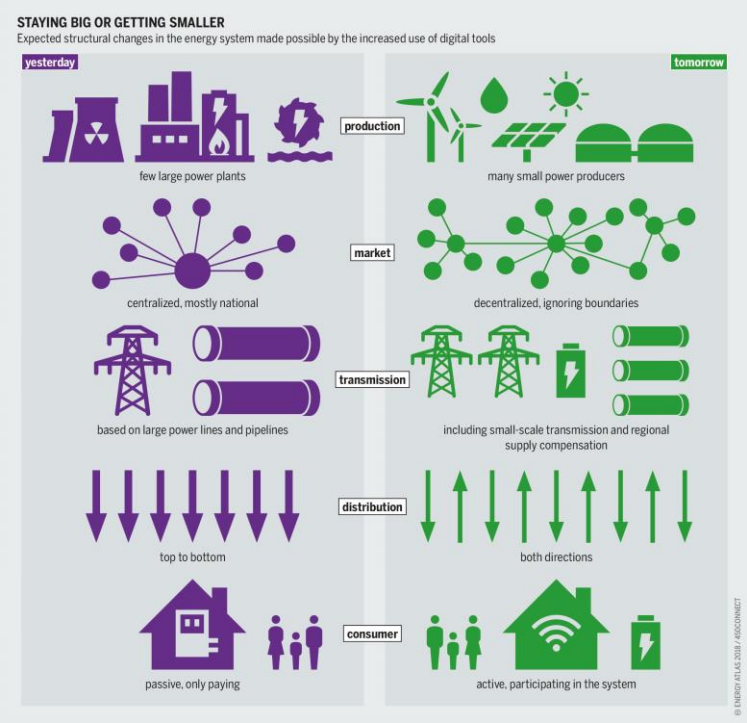
- **Public:** consumption stats & reports on the IESO website*
- **LDCs:** a significant library of general or custom data extracts
- **IESO:** more precision to electricity demand planning and forecasting, demand response programs evaluation
- **Government:** analytics for policy design and implementation
- **Third Parties:** data extracts for qualified Canadian Governmental Entities, assessing TPA expansion by year-end

https://www.ieso.ca/en/Sector-Participants/Smart-Metering-Entity/Consumption-Data

Building the Smarter Grid

- The Grid of the Future is Cleaner, Fragmented, Granular & Decentralized, Multi-Directional and Democratized.

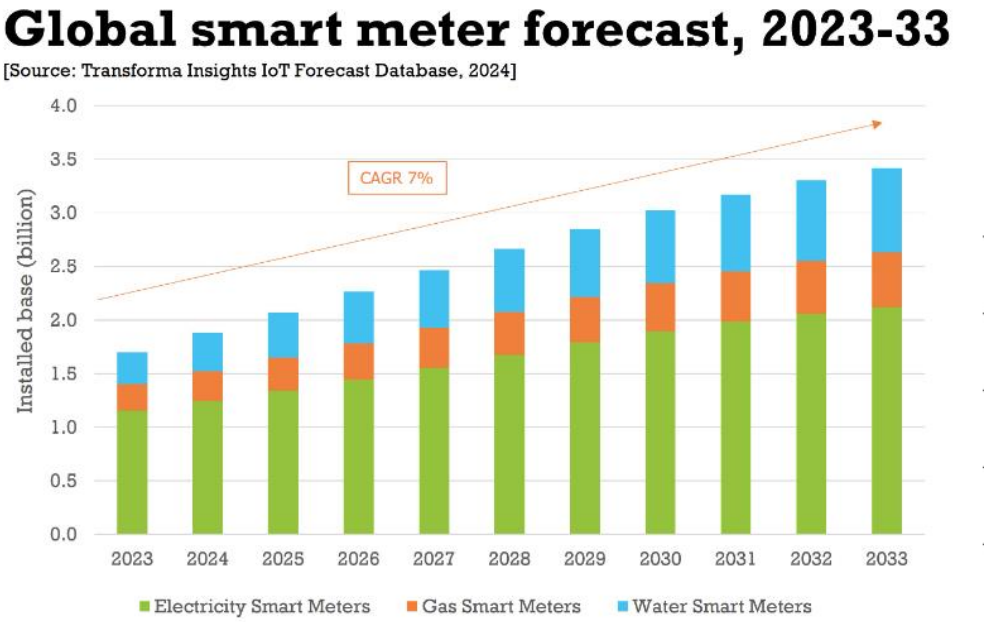
- A "smarter grid" harnesses the power of information technologies to monitor, control, and optimize the usage of the electricity system.



Source: Wikipedia

AMI is the Cornerstone of the Grid of the Future

- AMI refers to a system of smart meters, communications networks, and data management systems that enable two-way communication between utility companies and their customers' electricity meters.



From AMI 1.0 to AMI 2.0

Features	AMI 1.0	AMI 2.0
Communication	Basic two-way communication	**High-speed, real-time interaction**
Data Analytics	Basic consumption analytics	**Advanced AI-based predictive analytics**
Consumer Interaction	Limited feedback and basic TOU rates	**Real-time pricing and enhanced engagement**
Cybersecurity	Basic security protocols	**Enhanced encryption and secure channels**
Demand Response	Limited demand response	**Automated and advanced demand response**
Interoperability	Primarily standalone smart meters	**IoT and DER integration, smart home support**
Grid Management	Basic remote meter management	**Real-time load balancing, self-healing grids**

From AMI 1.0 to AMI 2.0

- This next-generation AMI empowers consumers and enables utilities to build a more resilient grid while reducing the carbon footprint.

Distributed Intelligence in AMI 2.0

Real–Time Monitoring and Control

- Monitoring grid health in real-time
- Detecting and responding to power quality issue immediately

Predictive Maintenance

- Identifying potential equipment failures before they occur
- Scheduling maintenance activities proactively to avoid downtime

Distributed Intelligence in AMI 2.0

Demand Response (DR)

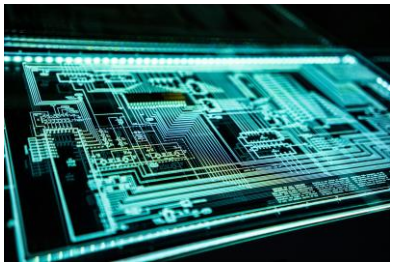
- Managing consumer demand based on real-time data
- Implementing DR programs more effectively

Voltage Regulation

- Ensuring optimal voltage levels throughout the grid
- Adjusting voltage levels in real-time as per local conditions

Enhanced Security

- Implementing advanced security measures at the edge
- Real-time threat detection and response



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What will the impact be to our industry?

- Enhanced Grid Management and Reliability
- Integration of Distributed Energy Resources (DERs)
- Improved Consumer Engagement and Demand Response
- Cost Savings for Utilities
- Data-Driven Decision Making
- Enhanced Cybersecurity and Data Privacy
- Support for Sustainability Goals
- Empowering Smart Cities and IoT Integration
- Increased Competitiveness for Utilities
- Regulatory and Market Shifts

Thank You

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