



Interoperability Standards and the Role of Energy Regulators

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CSA Group

Interoperability Standards and the Role of Energy Regulators



Outline

- CSA Group Overview
- Electricity Regulation in Canada
- National Standards System
- Standards Landscape
- Smart Grid Expectations & Implementation Issues

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Interoperability Standards and the Role of Energy Regulators



About CSA Group

- Independent, not-for-profit membership association
- More than ninety years of history
- Dedication to safety, social good, sustainability.

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CSA Group Core Businesses:

- Standards Development
 - Publications, training solutions, application tools
 - 54 Technology areas
- Global Testing & Certification
 - Hazardous Locations, Industrial, Plumbing, Construction
 - Medical, Safety & Technology
 - Alternative Energy, Lighting, Sustainability
- Consumer Product Evaluation

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Electricity Regulation in Canada

- Each Provincial and Territorial government is responsible for electrical safety and regulation of electrical utilities
- The Federal government oversees:
 - Electrical safety in federally regulated facilities (military bases, airports, etc.)
 - International electricity transactions
 - Standards Council Canada (SCC) and the National Standards System (NSS)

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National Standards System

Accredited Organizations

- Standards Development Organizations (4)
- Product & Service Certification Bodies (16)
- Calibration & Testing Laboratories
- Management System Certification Bodies
- Inspection Bodies

Participants Beneficiaries & Partners

- Consumers and Non-Government Organizations
- Industry
- Governments & Regulators

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National Standards System

- Process is open and inclusive
- Members develop technical content of standards
 - Representation from manufacturers, utilities, academia, consumers, regulators and other technical experts
- Decisions are determined by consensus
- Participation in international standards activity (IEC/ISO)
- Adoption of international standards where feasible
- Standards are voluntary unless referenced in regulation

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Standards Landscape

- IEC Smart Grid Standardization Roadmap (2010)
 - List of IEC Smart Grid Standards
- NIST Framework and Roadmap for Smart Grid Interoperability Standards (2012)
 - SGIP Catalog of Standards
- Interoperability Process Reference Manual (2012)
 - Testing and Verification
- Canadian Smart Grid Standards Roadmap – *Strategic Planning Document*
 - Task Force of the Canadian National Committee to IEC

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Why International Standards?

- Facilitates trade among economies
- Promotes competition among vendors
- Broadest possible choice for utilities to source equipment
- Streamlined production – less variation / reduced cost
- Wide range of contributors to content of standards
- Transparency for conformance testing
- Can be adapted according to local conditions

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Expectations for Utility SG Implementation

- Improved system reliability and situational awareness
- Integration of renewable energy generation technologies
- Facilitation of demand response
- Enhanced customer awareness of energy use
- Improved energy efficiency
- Ability to connect and accommodate new types of load (i.e. electric vehicles)
- Reduction of GHG emissions
- Improved customer service

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Smart Grid Implementation Issues

- Interoperability of equipment and systems
- Legacy systems will be transitioned over time
- Cyber security
- Customer privacy – incorporate at the start
- Standards continue to evolve
- Diverse systems in various economies

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Invitation to Regulators

- Be engaged with international standards development
 - IEC, ISO, IEEE, etc
 - Join National Committees
 - Monitor developments
- Participate in the Standards Development Organizations of your economy
 - Adoption / Adaptation of International Standards
- Encourage the use of International Standards where feasible

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THANK YOU

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