

# Ontario Smart Grid Forum: Interoperability Update

Tuesday, August 9<sup>th</sup> 2011



## Modernizing Ontario's Electricity System: Next Steps

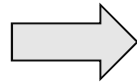
Second Report of the Ontario Smart Grid Forum  
May 2011



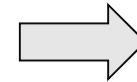
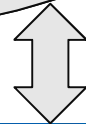
*"Industry should take advantage of widely used interoperability standards for defining smart grid specifications. Attention should be paid to the upcoming national recommendations from the Canadian National Committee of the International Electrotechnical Commission and its Task Force on Smart Grid Technology and Standards (facilitated by the Standards Council of Canada), which is monitoring international standards discussions."*

- Smart Grid interoperability standards are on the threshold of creating a new set of challenges – including standards **selection, implementation, and enforcement.**
- Over the next few months, several significant developments are expected in the creation of catalogues of standards available to all smart grid players to make use of. Questions of ‘How?’ ‘When?’ and ‘Where?’ may increasingly move to the forefront of the interoperability standards discussion....

# The emerging importance of a standards catalogue.



letter to FERC  
Chairman Jon  
Wellinghoff identifying  
the 5 foundational  
smart grid standards



**October 13, 2010:** U.S. National Institute of Standards and Technology (NIST) Identifies to the U.S. Federal Energy Regulatory Commission (FERC), five “foundational” sets of International Electro-technical Commission (IEC) standards for Smart Grid interoperability and cyber security. These five standards were among the 25 Smart Grid-relevant standards identified as "ready for implementation"

**January 31, 2011:** U.S. Federal Energy Regulatory Commission (FERC) technical conference to determine if there is “sufficient consensus” to move forward with a rule-making proceeding.



U.S. Federal Energy  
Regulatory  
Commission (FERC)

July 19, 2011:

“In this order, we find insufficient consensus to institute a rulemaking proceeding at this time to adopt the five families of standards.”



U.S. Federal Energy  
Regulatory  
Commission (FERC)

July 19, 2011:

“Going forward, we encourage utilities, smart grid product manufacturers, regulators, and other smart grid stakeholders to actively participate in the NIST interoperability framework process to work on the development of interoperability standards and to refer to that process for guidance on smart grid standards.”



U.S. Federal Energy  
Regulatory  
Commission (FERC)

July 19, 2011:

“In its comments, NIST suggests that the Commission could send appropriate signals to the marketplace by recommending use of the NIST Framework without mandating compliance with particular standards. NIST adds that it would be impractical and unnecessary for the Commission to adopt individual interoperability standards.”



U.S. Federal Energy  
Regulatory  
Commission (FERC)

July 19, 2011:

“We believe that the best vehicle for developing smart grid interoperability standards is the NIST interoperability framework process, including the work of the SGIP and its committees and working groups.”

# NIST



The U.S. National Institute of Standards and Technology (**NIST**) Smart Grid Interoperability Panel (**SGIP**):

- International membership (but largely from U.S.)
- 19 Priority Action Plans (PAPs), of which, 3 are now closed.
- 16 ongoing Working Groups in a variety of subject areas
- “One organization, one vote”
- **Maintains the *Catalogue of Standards***

**Membership by organizations' region of origin (as of July, 2011):**

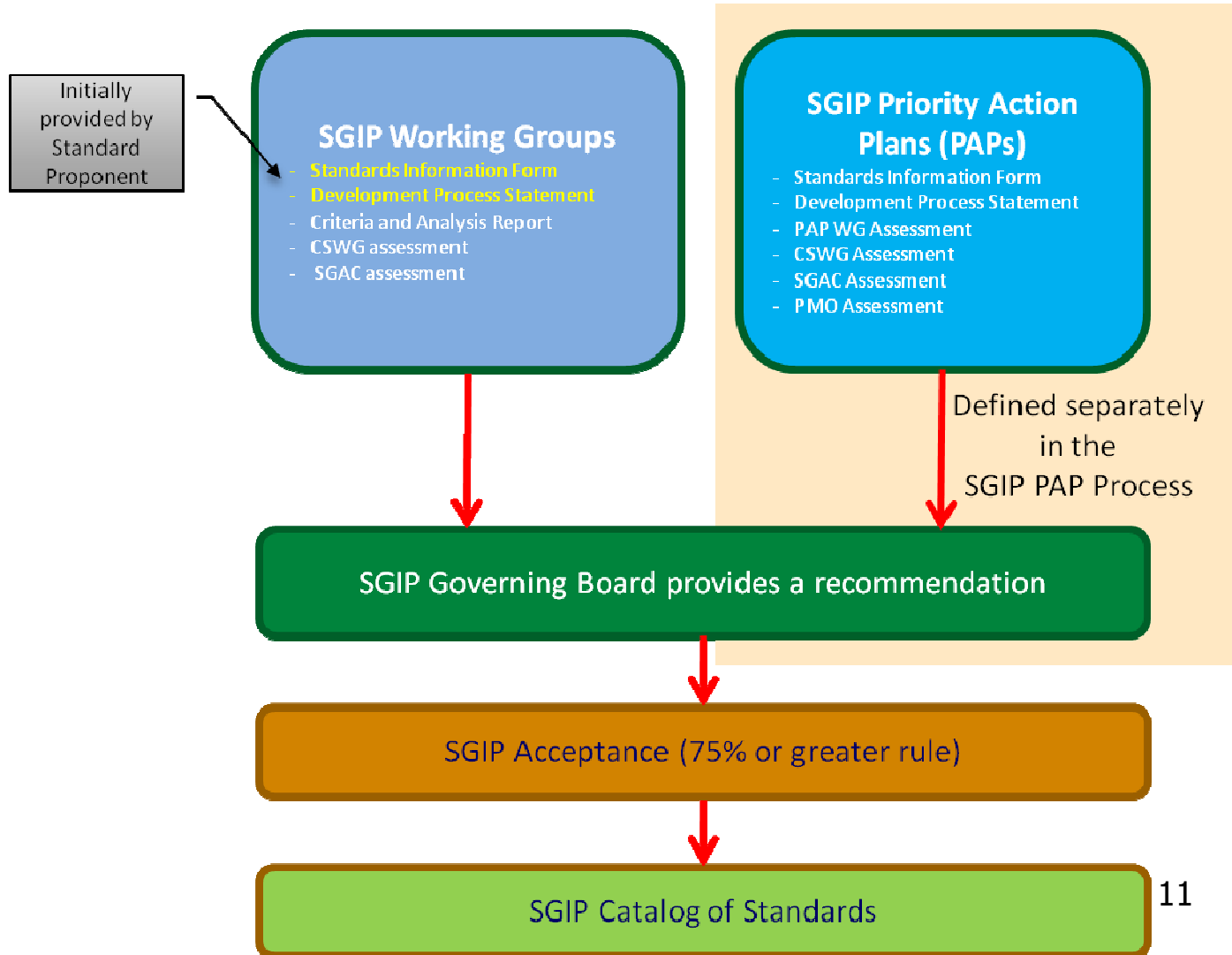
USA: 604  
N. America (non-US): 29  
Europe: 22  
Asia: 18  
Oceania: 5  
South America: 1  
Africa: 1

Total no. of Individual Members: 1,794

First six standards recently added as of July 2011...

1. IETF RFC6272: Internet Protocol Standards for Smart Grid
2. NAESB REQ18/WEQ19: Energy Usage Information
3. SAE J1772TM: Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler
4. SAE J28361: Use Cases for Communication Between Plug-in Vehicles and the Utility Grid
5. NEMA SGAMI 1: Requirements for Smart Meter Upgradeability
6. NISTIR 7761L Guidelines for Assessing Wireless Standards for Smart Grid

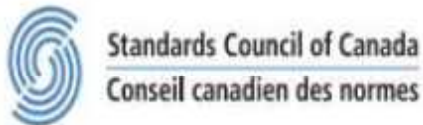
...and over 100 others at various stages of the review process.



## Canadian National Committee of the International Electrotechnical Commission and its Task Force on Smart Grid Technology and Standards



**Forum/WG Members on the Task Force:**  
Hydro One, IESO, OEB, Toronto Hydro, NRCan



CNC/IEC Membership

- Industry Associations: EFC, CME, ITAC, CEA
- Consumers
- Government



## Canadian National Committee of the International Electrotechnical Commission and its Task Force on Smart Grid Technology and Standards

### **Mandate:** produce Canada's standards roadmap

- “Harmonize with North America and internationally
- Identify key gaps or conflicting requirements
- Make recommendations how to successfully blend Gov. policy, development and standards based strategies.”

## Canadian National Committee of the International Electrotechnical Commission and its Task Force on Smart Grid Technology and Standards

### Principles:

- “Canada's Smart Grid Task Force should aim to ensure that Canada's needs are reflected in products developed under the Smart Grid initiatives at IEC
- Make best efforts to leverage national and North American efforts to ensure our Smart Grid priorities are identified and incorporated into IEC's work
- Avoid national and regional differences, unless these are appropriately identified and understood as necessary”



- Version 2.0 of *NIST Framework and Roadmap for Smart Grid Interoperability Standards* anticipated by end of year.
- Draft available for review and public comment as of July 11<sup>th</sup>
- Over 100 standards, requirements and guidelines identified for review for possible inclusion in the SGiP Catalogue of Standards

Canadian Committee of  
the IEC Smart Grid  
Task Force



- Draft recommendations to be ready by this fall.
- Roadmap to be published in 2012
- **Focus on Transmission, Distribution, and behind the meter devices.**
- IEC Relational Database Tool being developed to help manage gaps/conflicts and maintain future interoperable<sub>15</sub> harmonization

- What lessons can Ontario learn from the recent FERC ruling?
- **How** should Ontario “take advantage” of the emerging catalogues of smart grid standards that are becoming available?
- **Where** and **when** should standards selection and enforcement become a matter of common concern across the Ontario electricity sector?



ieso

Power to Ontario.  
On Demand.

Thank you.