



## Accelerating Grid Modernization

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### IMPLICATIONS FOR UTILITY REGULATION

The **Smart Grid Interoperability Panel** is a member-funded, global, non-profit organization that orchestrates the work behind power grid modernization. SGIP was established to identify requirements for harmonization of technical interoperability standards that advance grid modernization. SGIP accelerates the realization of benefits for all stakeholders: utilities, manufacturers, consumers and regulators. SGIP members stay competitive, informed and well-connected.

SGIP members collaborate to identify requirements for technical standards and gaps among standards that influence how the electric grid is modernized. With privileged access to the collected knowledge of all the domains in the Smart Grid ecosystem, dues-paying SGIP members accelerate interoperability, testing and certification so that efficient, secure electrical power can reliably maintain and increase standards of living around the world.

Successful implementation of interoperable technologies is the ultimate benefit and value of SGIP. Implementation is integral to the acceleration aspect of our mission and required for members to clarify and realize their value propositions.

#### MISSION

Provide a framework for orchestrating all stakeholders to accelerate Smart Grid standards harmonization and systems interoperability.

#### BACKGROUND

Despite sizable utility enhancements, today's electric grid is built on technology, business models and regulations often dating back a century or more. Tying together legacy – and often proprietary – systems with newer technologies can pose a challenge to increasing the grid's reliability, security and efficiency. Technology upgrades promise digital communication, but widespread modernization will be more complex and more expensive if components lack interoperable capability. As more types of devices and sub-systems connect to electrical grids, the need for careful evaluation of cybersecurity risks is vital.

SGIP was created as a result of the U.S. Energy Independence and Security Act (EISA) of 2007 to provide a framework for coordinating all Smart Grid stakeholders in an effort to accelerate standards harmonization and advance the interoperability of Smart Grid devices and systems. The public-private partnership, created in November 2009, was initially funded and managed by U.S. National Institute of Standards and Technology (NIST) with the intent to ultimately transition to a non-profit, member-funded/managed model. This was successfully accomplished in 2013.

#### SGIP'S ROLE IN POWER GRID MODERNIZATION

SGIP members are relentless in their pursuit of harmonizing Smart Grid standards for improved interoperability and reliability and are intent on breaking down barriers between standards development and affected associations, manufacturers, vendors, and utility companies. SGIP believes a Catalog of Standards is the optimal tool to encourage the adoption of grid modernization technologies and achieve a robust, resilient and secure global grid. This is done by:

1. Accelerating interoperability through the harmonization of standards
2. Facilitating core technical work to enable acceleration
3. Providing efficient and effective navigation of standards
4. Communicating to make it all happen
5. Sharing implementation experiences and documenting lessons learned

#### Management:

Chair: John McDonald  
President: Patrick Gannon  
VP: John Caskey  
Treasurer: Nick Wagner  
Secretary: Barry Hasser

#### Industry:

Non-profit; Energy – Orchestrates the work behind power grid modernization through harmonization of standards to improve reliability

#### Technical Activities:

Domain Expert Working Groups  
Priority Action Plans  
Member Committees

#### Products:

Implementation Methods  
White Papers  
Requirements  
Use Cases  
Conceptual Models  
Roadmaps  
Catalog of Standards

**Number of Members:** 200+

**Launch Date:** 2013

#### Events:

[SGIP Inaugural Conference](http://sgip.org/sgip-inaugural-conference-2)  
<http://sgip.org/sgip-inaugural-conference-2>  
Progress Through Collaboration



#### Membership Information:

[Member Benefits page](http://sgip.org/membership/) at  
<http://sgip.org/membership/>

### WHY ARE INTEROPERABILITY STANDARDS IMPORTANT?

Agreed upon definitions of terms, communication protocols, common interfaces, and other standards enable different systems and devices from multiple vendors to work together. As a result, interoperability standards reduce costs, increase consumer choice, and promote competition. Such competition can accelerate innovation and realization of additional consumer benefits. Standards also will make it easier for consumers to use smart devices, prevent premature obsolescence of Smart Grid investments, facilitate future upgrades, ensure that systems can be scaled up for larger deployments, and by making information more readily available to system operators, improve the reliability of the electric grid.

An accelerated standards development process is underway to support early Smart Grid deployments. As the capabilities of the Smart Grid evolve over time, additional interoperability standards will be developed to support new functions to realize all of the anticipated benefits.

### WHAT ARE THE ROLES OF REGULATORY AGENCIES IN THE DEVELOPMENT AND IMPLEMENTATION OF SMART GRID STANDARDS?

First and foremost, standards and regulatory policies must be consistent. SGIP encourages regulatory agency participation in its committees and working groups to ensure that state and local views are represented in setting priorities and guiding actions.

EISA directs the Federal Energy Regulatory Commission (FERC), after sufficient consensus is achieved, to institute a rulemaking proceeding to adopt standards necessary to ensure Smart Grid functionality and interoperability in the interstate transmission of electric power and regional and wholesale electricity markets.

A significant portion of Smart Grid investments will be in distribution and retail applications that are under the purview of state utility regulatory agencies which may elect to adopt standards identified by NIST and SGIP. Appropriate reliance on such standards can reduce the cost and risk of Smart Grid investments.

Additionally, SGIP undertakes assessments that have important state and federal regulatory policy implications, including:

- Preparing guidance for the protection of consumer privacy and consumer access to electricity usage data;
- Developing cybersecurity guidelines for standards that may be incorporated in power system reliability rules; and
- Identifying performance and reliability requirements for smart grid communications.

SGIP's work impacts a range of energy, environmental, consumer, and telecommunications issues.

### WHY SHOULD UTILITY REGULATORS GET INVOLVED?

SGIP is where a broad cross-section of stakeholders are developing consensus about how to build a smarter grid. Regulatory agencies have the opportunity to provide guidance in this process and play a key role in achieving the benefits of a Smart Grid. The identification and development of standards for the Smart Grid should reflect regulatory policies, while providing a foundation for educating and engaging consumers to enjoy its benefits. Regulator staff can also stay abreast of new technology developments and the business impact of the related standards

### Example Areas to Get Involved:

- **Smart Grid Cybersecurity Committee (SGCC)** identifies the potential security and reliability impact to standards that affect utilities and consumers in the case of a cybersecurity attack.
- **SGCC Privacy Subgroup** works at protecting consumers' privacy to prevent "snooping" and unnecessarily high rates or unfair pricing practices.
- **Smart Grid Implementation Methods Committee** develops and shares best practices, lessons learned and implementation experience case studies; and provides an online tool to help navigate the hundreds of standards used in Smart Grid deployments.
- **Business & Policy (BnP) Domain Expert Working Group (DEWG)** assists business decision-makers and legislative/regulatory policy-makers in implementing Smart Grid policies sensitive to interoperability.
- **Green Button (PAP20)** is promoting a common data interface standard to enable consumers to have access to their own energy usage information in a downloadable, easy-to-use electronic format, offered by their utility or retail energy service provider.

SGIP Member organization categories includes Stakeholder Category 19, for "State and Local Regulators" which has an elected representative on the SGIP Board of Directors. Contact [info@sgip.org](mailto:info@sgip.org) for more information.