

NIST Issues First Release of Framework for Smart Grid Interoperability

FOR IMMEDIATE RELEASE:
January 19, 2010

GAITHERSBURG, Md.—The Commerce Department’s National Institute of Standards and Technology (NIST) issued today an initial list of standards, a preliminary cyber security strategy, and other elements of a framework to support transforming the nation’s aging electric power system into an interoperable Smart Grid, a key component of the Obama administration’s energy plan and its strategy for American innovation.

NIST Director Patrick Gallagher announced the publication of the NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, to the some 700 engineers, scientists, and business and government executives attending the IEEE Innovative Smart Technologies Conference, which NIST is hosting.

The Energy Independence and Security Act of 2007 (EISA) set development of the Smart Grid as a national policy goal, and it assigned NIST the “primary responsibility to coordinate development of a framework that includes protocols and model standards for information management to achieve interoperability of Smart Grid devices and systems ...”

“This is an important milestone for NIST, for the entire community of Smart Grid stakeholders, and for the nation,” Gallagher said. “This first installment of the Smart Grid interoperability framework will pay dividends to our nation for decades to come. Just as Congress intended, we are building a foundation for sustainable growth and future prosperity.”

By integrating digital computing and communication technologies and services with the power-delivery infrastructure, the Smart Grid will enable bidirectional flows of energy and two-way communication and control capabilities. A range of new applications and capabilities will result. Anticipated benefits range from real-time consumer control over energy usage to significantly increased reliance on solar and other sources of clean renewable energy to greatly improve reliability, flexibility and efficiency of the entire grid.

The new report presents the first release of a Smart Grid interoperability framework and roadmap for its further development. It contains:

- a conceptual reference model to facilitate design of an architecture for the Smart Grid overall and for its networked domains;
- an initial set of 75 standards identified as applicable to the Smart Grid;
- priorities for additional standards—revised or new—to resolve important gaps;
- action plans under which designated standards-setting organizations will address these priorities; and
- an initial Smart Grid cyber security strategy and associated requirements.

A draft of today's report was issued on Sept. 24, 2009, for public review and comments. More than 80 individuals and organizations submitted comments. A companion draft document, NISTIR 7628, Smart Grid Cyber Security Strategy and Requirements, also underwent public review. A subsequent draft of the cyber security strategy, which will include responses to comments received and will incorporate new information prepared by the almost 300-member cyber security working group, will be issued in February. NIST intends to finalize the Smart Grid cyber security in late spring.

Under EISA, the Federal Energy Regulatory Commission (FERC) is charged with instituting rulemaking proceedings, and once sufficient consensus is achieved, adopting the standards and protocols necessary to ensure Smart Grid functionality and interoperability in interstate transmission of electric power and in regional and wholesale electricity markets. However, some of the standards listed in the NIST report are still under development and some others, such as those already used voluntarily by industry, may not warrant adoption by FERC or other regulators.

"NIST is working closely with FERC and state utility regulators so that we can coordinate development of additional technical information on individual standards to support their evaluation and potential use for regulatory purposes," said George Arnold, NIST's national coordinator for Smart Grid interoperability.

In November 2009, NIST launched a Smart Grid Interoperability Panel (SGIP) to assist NIST in carrying out its EISA-assigned responsibility, including working with regulatory bodies on evaluating and implementing standards in this and subsequent releases of the NIST interoperability framework.

A public-private partnership, the SGIP is designed to provide "a more permanent process" to support the evolution of the interoperability framework and further development of standards, according to the report. With NIST, the report explains, the panel will "identify and address additional gaps, assess changes in technology and associated requirements for standards, and provide ongoing coordination" of standards organizations' efforts to support timely availability of needed Smart Grid standards.

Over the past two months, almost 500 organizations have joined the SGIP. A total of 1,350 individuals from membership organizations have signed up to participate in the panel's technical activities.

A copy of the NIST Framework and Roadmap for Smart Grid Interoperability Standards, Release 1.0, can be downloaded here: http://www.nist.gov/public_affairs/releases/smartgrid_interoperability_final.pdf

Comments on the draft report can be found here: <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/IKBFramework>

To learn more about the SGIP, go to: <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid.SGIP>