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**Draft NIST Framework and Roadmap
for
Smart Grid Interoperability
Standards,
Release 2.0**

October 2011

Working Draft

NIST Plan for Interoperability Standards

To carry out its EISA-assigned responsibilities, NIST devised a three-phase plan to rapidly identify an initial set of standards, while providing a robust process for continued development and implementation of standards as needs and opportunities arise and as technology advances.

- **(Phase 1): Engage stakeholders in a participatory public process to identify applicable standards and requirements, gaps in currently available standards, and priorities for additional standardization activities.** With the support of outside technical experts working under contract, NIST compiled and incorporated stakeholder inputs from three public workshops, as well as technical contributions from technical working groups and a Cybersecurity Working Group (CSWG, originally named the Cybersecurity Coordination Task Group, or CSCTG), into the NIST-coordinated standards roadmapping effort.
- **(Phase 2): Establish a Smart Grid Interoperability Panel forum to drive longer-term progress.** A representative, reliable, and responsive organizational forum is needed to sustain continued development of the framework of interoperability standards. On November 19, 2009, a Smart Grid Interoperability Panel (SGIP) was launched to serve this function and has now grown to over 675 organizations comprising over 1790 members.
- **(Phase 3): Develop and implement a framework for conformity testing and certification.** Testing and certification of how standards are implemented in Smart Grid devices, systems, and processes are essential to ensure interoperability and security under realistic operating conditions. NIST, in consultation with stakeholders, initiated and completed two major efforts in 2010: (1) performed an assessment of existing Smart Grid standards testing programs; and (2) provided high-level guidance for the development of a testing and certification framework. A permanent Smart Grid Testing and Certification Committee (SGTCC) was established within the SGIP. The SGTCC has assumed the responsibility for constructing an operational framework, as well as the action plans for development of documentation and associated artifacts supporting testing and certification programs that support Smart Grid interoperability.

310 additional impetus to accelerate the nationwide transition to the Smart Grid. However, given that
311 investments are ongoing and ramping up rapidly, standards adopted or developed in support of
312 this transition must fully reckon with the need for backward compatibility with deployed
313 technologies.
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315 A recent forecast projects that the U.S. market for Smart Grid-related equipment, devices,
316 information and communication technologies, and other hardware, software, and services will
317 double between 2009 and 2014—to nearly \$43 billion. Over the same time span, the global
318 market is projected to grow to more than \$171 billion, an increase of almost 150 percent.²¹

319 In the absence of standards, there is a risk that the diverse Smart Grid technologies that are the
320 objects of these mounting investments will become prematurely obsolete or, worse, be
321 implemented without adequate security measures. Lack of standards may also impede future
322 innovation and the realization of promising applications, such as smart appliances that are
323 responsive to price and demand response signals.

²¹ Zpryme, "[Smart Grid: United States and Global Hardware and Software Companies Should Prepare to Capitalize on This Technology.](#)" Dec. 14, 2009.