

To: Federal Energy Regulatory Commission
From: GridWise Architecture Council
Subject: FERC Proposed “Smart Grid Interoperability Standards” Docket No. RM11-2-00
Date: April 8, 2011
cc:

Summary

Members of the GridWise® Architecture Council (GWAC) have reviewed the proposed Federal Energy Regulatory Commission “Smart Grid Interoperability Standards” Docket No. RM11-2-00 and are pleased to offer comments to the Commission.

The Technical Conference on Smart Grid Interoperability Standards provided the broad community of stakeholders a valuable opportunity to identify and discuss issues related to FERC and the regulatory community’s use of interoperability standards. Individual members of the GWAC participated as panelists in the technical conference. The full membership of the council has discussed the conference and the ongoing questions that were raised by the panelists and others.

The GWAC has identified several key points for FERC and the regulatory community to consider as they further deliberate how to apply the results of the smart grid interoperability standards development efforts. These points are as follows.

- Avoid mandating the use of specific technical standards.
- Understand that technical standards evolve over time.
- Consider the use of business process standards that relate to achieving interoperability.

Each of these is explained more fully below.

Avoid mandating the use of specific technical standards

Utilities and vendors should be free to choose the most appropriate and cost effective technologies as they implement smart grid projects. Regulatory action that prescribes specific technical standards limits the ability of utilities and vendors to design and implement the most cost-effective smart grid solutions. Interoperability provides a number of benefits and should be emphasized in evaluating proposed smart grid projects. Mandating specific technical standards, even if they are interoperability standards, has several problems including, but not limited to:

- The prescribed standards may not meet the technical requirements of the diverse range of projects that will be needed to implement and achieve the benefits of smart grid technology.

- Prescriptive use of standards results in the creation of legacy system problems. A rapid evolution of some elements of smart grid technology should be expected. The standards that make sense today may not work tomorrow. Prescriptive use may block the future evolution of smart grid systems, thereby constraining new systems to legacy technologies..

Technical standards evolve over time

As technology evolves and matures so do the associated standards. For example, IEEE 802.11 is used by many people, though they may know it by the marketing name Wi-Fi. IEEE 802.11 has gone through a number of evolutions since the initial release in 1997. Mandatory use of an early version of IEEE 802.11 would prevent adoption of the much higher performance versions that reflect recent versions of the standard and the advancements in technology. Of particular importance is the significant evolution in the revised standard for improved cyber security features that are much more robust today than in the original version.

Whereas electrical safety-interconnect standards have been reasonably stable over time, the smart grid interoperability standards will continue to evolve. Interoperability standards are by their very nature addressing the information technology elements of smart grid, that is, the ability to exchange information between systems. The pace of change in information technology is rapid. Thus, interoperability standards will change more rapidly than the standards traditionally considered by power system regulators. Interoperability is fundamentally about creating a logical connection for control and data exchange among different systems. Smart grid interoperability standards should focus on system-to-system interfaces, rather than on the systems themselves.

Consider the use of business process standards that relate to how one achieves interoperability

As FERC and the broader regulatory community consider how to set expectations for the implementation of smart grid projects, they should consider the use of functional requirements that define the expectation that utilities will achieve highly interoperable smart grid implementations. It is reasonable to expect utilities and vendors to employ sound system engineering principles that factor interoperability into system design and implementation. This may be achieved through the use of tools such as the GWAC Interoperability Decision Maker's Checklist and through the creation of business process standards such as the "IntelliGrid Methodology for Developing Requirements for Energy Systems" (IEC/PAS 62559) that defines a processes to be used by utilities in implementing smart grid projects.