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FERC-NARUC Smart Grid Collaborative
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III. Suggestions for FERC to Establish Interoperability Standards

Establishing interoperability standards will enable smart grid concepts to be deployed more quickly, efficiently and cost-effectively. Having these “rules of the road” for devices and systems that must work together in the energy system of the future is key to successfully transforming the electric grid into a national asset. Steps for FERC to consider include:

- Clarify for NIST (and framework participants) the scope of purview that FERC has in interoperability for interstate transmission of electric power, and regional and wholesale electricity markets.
- Provide guidance to NIST to facilitate the development of standards that can meet regulatory criteria and ease regulators’ decisions in this area. For example, identify what federal laws could affect regulatory decisions to adopt such standards. FERC should continue active engagement with NIST to see that their efforts result in supportable material for FERC and others to implement.
- Consider performance-based standards rulings that do not specify a technology or a technical standard, but require that such things be included in proposals to ensure that the performance of the resulting system addresses interoperability principles. The GridWise Architecture Council’s Decision-Maker’s Checklist has examples of performance-based criteria.
- Work with the stakeholder base, with help from GWAC and others, to develop a project review checklist for regulators and organizations coming to regulators for project review or proposals.

In considering standards that encourage implementations, FERC (and NIST) should consider a broad notion of what may constitute a “standard.” Besides communications protocols, standards could be developed for:

- E-commerce-style registries of distributed resources, connection agreements, etc.
- management of unique identification of resources, locations, customers, etc. (similar to Vehicle Identification Numbers (VIN)),
- performance-based checklists and other review tools,
- measurement, validation, and verification processes or agreements.
IV. Suggestions for FERC-NARUC Collaborative to Help Regulators on Smart Grid Decisions

General Suggestions

- Develop familiarity with smart grid concepts (definition, scope, examples, and potential outcomes) within the regulatory community. Examine the range of potential values likely to emerge over the next 20-30 years to enable the nation to capture the maximum return on future smart grid investments.
  - Draw upon the work of others including language in the Energy Independence and Security Act of 2007, as well as work of DOE, GridWise Alliance, EPRI, GWAC and the Galvin Initiative. Target the broad perspective because the perspectives of the various stakeholders and the landscape will continue shifting.
  - Consider workshops, web-based forums, and collaborating with other venues to advance understanding.
  - Develop smart grid terminology related to regulators. Create a task team to propose common smart grid terminology appropriate for regulatory activity. Again, existing organizations can assist in this endeavor.
- Develop approaches that encourage and enable demand response, distributed generation, and storage to contribute ancillary services to bulk system operations. This will require close collaboration between state and federal regulatory bodies.
- Develop measurement and verification guides for monitoring renewable portfolio and efficiency programs.
- Perform consumer outreach on electricity issues addressed by smart grid decisions, with clear descriptions of the intent, benefit, and impact of those decisions.
- Examine potential social benefit of handling grid emergencies by end-use rather than entire feeder as potentially enabled by smart grid concepts like demand response, distributed generation and distribution automation, for example. Smart grid concepts may enable continued power service to select end-uses essential for emergency operations and public safety during restoration.
- Actively participate in shaping and evaluating large scale demos in main regulatory categories (IOU traditional, IOU with ISO market influence, and tax exempt territory) and seek to develop a full regulatory analysis of consumer interactions, utility incentives, and connection to emerging national policy drivers of carbon management and reduced energy imports. Capture general lessons-learned and disseminate widely to inform regulatory innovation and consumer awareness and acceptance. Share information and perspectives for incorporation in the biennial Smart Grid System Report from the Secretary of Energy to Congress.
- Investigate how to encourage regional, inter-connection and national benefits to be gleaned from greater transparency and wide area operations awareness. Resistance to sharing data continues to impede coordination and integration that can improve reliability and emergency response.
- Ensure that infrastructure investment incentives recognize and meet likely minimum performance requirements of emerging market structures likely to be seen over next 20 years. This will enable near-term infrastructure investments to have the flexibility to extract additional future benefits for consumers and the nation as our national energy situation evolves.

Interoperability Specific Suggestions
• Familiarize the regulatory community with interoperability issues. Consider the interface between transacting parties. Clarify who is responsible for actions on either side of the interface. Agreements need to be reached for coordination to take place. Such agreements need to cover technical (communication connection, protocols), informational (terminology, message content, measurement units), and organizational issues (business process, objectives, and the regulatory environment to support them).

• Consider interoperability principles related to regulators and reflected in the GridWise Architecture Council’s Decision-Maker’s Checklist.
  - A task team could develop the FERC-NARUC interoperability checklist for reviewing proposals or rule making.
  - Tailoring such a list could address regional and local concerns; however, stakeholders and oversight will benefit from consistency and uniformity.

• Identify and clarify legal issues that need resolution as smart grid information exchange grows beyond corporate boundaries. Examples of such issues include,
  - privacy rights - data ownership, data stewardship
  - security from cyber attack
  - information archival and level of transparency to transactions for auditing proper conduct
  - consequences for failure to perform
  - ensuring the specification of safe operating positions to take in the event of loss of communication to preserve health of the greater electric system

• Develop tools, such as template-oriented documents or models for rulemaking, that provide states and other regulatory and governing agencies with guidance to clarify the legal treatment of cross-boundary transactions in support of smart grid activity. Such tools should assist their users in tailoring material for their specific needs.

• The Architecture Council is a resource to help. Consider inviting GWAC members to future FERC-NARUC Smart Grid Collaborative discussions on this topic.