Resolution on Smart Grid Principles

WHEREAS, NARUC supports the adoption and implementation of smart grid technology because smart upgrades to, and modernization of, the transmission and distribution system can make the electric grid more efficient and offer benefits to consumers and society, especially when combined with advanced metering, efficient pricing, and consumer-focused technologies; *and*

WHEREAS, Since 2000, NARUC has expressed that support by adopting resolutions addressing important issues arising from advanced metering and smart grid deployments, including ratemaking, reliability, cyber security, consumer education, consumer protection and privacy;[1] *and*

WHEREAS, State commissions bear the ultimate responsibility for ensuring that smart grid investments funded wholly or in part by ratepayer dollars are just and reasonable and properly balance the needs of the consumer, the grid, and the utilities; *and*

WHEREAS, State commissions are in the best position to consider unique local situations, including market structures, infrastructure needs, consumer concerns, and policy priorities; *and*

WHEREAS, In order to advance the development and collective understanding of smart grid technologies and policy—and to help State commissions make the best possible decisions—NARUC members have participated in valuable dialogues with federal government agencies, including the National Science and Technology Council Committee on Technology Smart Grid Subcommittee, the Department of Energy, the Federal Energy Regulatory Commission, the United States Department of Agriculture's Rural Utilities Service, the National Institute of Standards and Technology, and the Federal Communications Commission; *and*

WHEREAS, To the same ends, NARUC Commissioners have also participated in a series of valuable Critical Consumer Issues Forum (CCIF) meetings with consumer advocates and utility representatives. These meetings have been valuable in facilitating communications and a better understanding of the interests and concerns of the stakeholders; the CCIF collaboration should continue; *and*

WHEREAS, The NARUC Smart Grid Working Group was formed to consult with the White House during the preparation of its "Policy Framework for the 21st Century Grid: Enabling Our Secure Energy Future," issued on June 13, 2011; *now, therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2011 Summer Committee Meetings in Los Angeles, California, while recognizing that grid modernization will evolve over time and additional principles may emerge, endorses the following foundational principles relating to advanced metering and smart

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[1] *See e.g., Resolution on Smart Grid*, July 2010; *Resolution Regarding Cybersecurity*, February 2010; *Resolution Regarding Smart Grid*, July 2009; *Resolution Supporting the National Action Plan for Energy Efficiency VISION FOR 2025: Developing a Framework for Change*, February 2008; *Resolution to Remove Regulatory Barriers to the Broad Implementation of Advanced Metering Infrastructure*, February 2007; *Resolution Encouraging State commissions to Adopt Full and Open Access Rules for Distributed Generation Technologies and to Remove Regulatory Barriers and Promote "Best Practices" That Encourage Economic Deployment of Distributed Generation Technologies*, (July 2000); *Resolution Urging Adoption of General Privacy Principles For State Commission Use in Considering Privacy Implications of the Use of Utility Consumer Information*, (July 2000).

grid deployments for the purpose of educating NARUC members and identifying issues of concern and interest to State regulators, the federal government and others:

- *Potential of Smart Grid Investments.* State commissions should consider the potential for smart grid investments to improve reliability, provide for a more resilient power system, reduce peak demand, provide consumers with more detailed information regarding their energy usage, integrate renewable resources, reduce consumption of electricity, increase operational efficiencies to potentially offset or reduce the rate of increasing electricity costs, and enable economic growth and innovation.

- *Evaluating Smart Grid Investments.* When evaluating proposed smart grid investments, State commissions should require the quantification of the benefits and costs of proposed project(s) to the extent reasonably possible. Any qualitative benefits and costs used in the analysis and decision-making should be identified and articulated to the extent reasonably possible. State commissions should identify the risks and rewards of smart grid investment projects and allocate those risks and rewards appropriately to utility shareholders and consumers.

- *Cost recovery.* Cost recovery for smart grid investment should be predicated primarily on the cost of such investments and any economic, reliability, environmental, or other benefits and should consider aligning payments by consumers with benefits to consumers to the extent reasonably possible. State commissions should consider, to the extent possible, anticipated costs of future investments that would reasonably or necessarily follow from proposed investments.

- *Dynamic Rates, Usage Data and Controls.* State commissions should consider whether to encourage or require the use of tools and innovations that can help consumers understand their energy usage, empower them to make informed choices, and encourage consumers to shift their usage as appropriate. These tools may include dynamic rate structures, energy usage information and comparisons, in-home devices and Web-based portals.

- *Smart Devices.* State commissions should consider whether and how proposed smart grid projects will interact with and encourage smart appliances and other devices that can optimize electricity usage, implement consumer preferences, and provide opportunities to reduce power system costs without requiring significant changes in consumer behavior.

- *Consumer Engagement.* Consumer education and engagement are essential to a successful smart grid deployment. State commissions should require smart grid implementation plans to include comprehensive consumer education programs, appropriate funding for consumer education in the cost of the program, and involve utilities, consumer advocates, the commission, and third parties in the process of designing and implementing consumer education. Education proposals should address how the effectiveness of consumer education programs will be evaluated. Consumer behavior studies and well-structured experimental design may inform consumer education approaches, as may the emerging market demand for smart-home applications and services.

- *Consumer Protections.* When reviewing a smart grid deployment, State commissions should consider any potential impacts to vulnerable populations and ensure that sufficient protections are in place.

- *Data Access.* Consumers should have access to their own energy usage data. Such Consumer Energy Usage Data (CEUD) should continue to be available to the regulated utilities for the purpose of providing essential regulated utility service. Rules that govern data access must balance privacy with innovation. When considering rules to govern access to CEUD, State commissions should determine: how third party entities will receive authorization to obtain CEUD, which entities will be responsible for providing CEUD to authorized entities, in what form, and at what cost, if any; how to ensure that consumers have affordable and timely access to their own CEUD; what data should be made available, with consumers' informed consent and authorization, in a competitively neutral manner to utility affiliates and third parties; and how the data access rules will affect innovation. The NAESB Third Party Access to Smart Meter-based Information provides a good reference point when developing such rules.

- *Privacy Issues.* Consumer privacy is essential and should be protected. When considering or implementing smart grid investments, State commissions should review existing privacy policies, and, if necessary, adopt or update their policies to ensure that they properly address the privacy concerns created by smart meter data collection and transmission and track national privacy best practices. Commissions should require utilities and any relevant third parties to comply with those policies. NARUC is preparing a best practice guide to help State commissions craft policies for data access and privacy.[2]

- *Interoperability Standards.* When evaluating smart grid investments, State commissions should consider how certified smart grid interoperability standards may reduce the cost and improve the performance of smart grid projects and encourage participation in the Smart Grid Interoperability Panel, a public-private partnership that is coordinating and accelerating the development of interoperability standards for the smart grid.

- *Network Communications Needs.* When evaluating smart grid investments, State commissions should examine utility proposals to ensure that the communications networks selected for particular business applications are reliable, resilient, flexible, secure, standards-based, and scalable, have adequate coverage area, and provide continuity during emergency and non-emergency periods. Several communications platforms and solutions may be able to meet these requirements, including wireless, wireline, commercially available, and proprietary networks. Utilities should consider a range of alternatives, including existing communications infrastructures, to ensure that the communications infrastructure investments represent the best possible solutions.

- *Security Issues.* As a condition of approving smart grid investments, State commissions should hold utilities responsible for ensuring that smart grid technologies are deployed in a manner consistent with reasonable and effective cyber and physical security best practices. Smart grid systems should be designed to mitigate risks and enhance the resiliency of the power grid and preserve the accuracy, integrity, and privacy of data. State commissions

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2 There are many resources on privacy policies, that will guide NARUC's efforts, including the NIST Guidelines for Smart Grid Cyber Security (NISTIR 7628) Section on Privacy and the Smart Grid; the North American Energy Standards Board (NAESB) Recommended Standard for Third Party Access to Smart Meter-based Information, which surveyed the landscape of smart grid privacy documents, *available here:* http://www.naesb.org/data_privacy.asp; and the Fair Information Practices Principles, *see e.g.* http://www.ftc.gov/reports/privacy3/fairinfo.shtm.

should refer to the cyber security standards promulgated by NERC and the NIST cyber security guidelines and recognize that cyber security requires coordination, adaptability and resiliency that goes beyond standards compliance. State commissions should require utilities to employ cost-effective measures to protect the grid's critical systems, while recognizing that a determined adversary may be capable of infiltrating non-essential systems. Further, State commissions may want to assure that utilities have recovery plans in the event of a successful cyber or physical threat.

- *Lessons Learned.* When considering smart grid investments, commissions may benefit from the data, analysis, and lessons learned from early deployments including through information provided by our technical assistance partners.[3] Utilities are expected to use best efforts to continuously monitor the results and data from smart grid deployments and to submit proposals that reflect best practices and lessons learned.

- *Third Party Deployments.* There may be opportunities for parties other than electric utilities to contribute to the development of the smart grid – particularly when third parties increase efficiency and enhance consumer opportunity. Third parties may be able to provide consumers new information, pricing and service options or to deploy microgrids, distributed generation and storage, energy management or other smart grid systems and technologies. Commissions should consider whether existing rules and practices impose undue barriers to beneficial competition and innovation and how to maintain appropriate regulatory oversight and consumer protections.

- *Work with Federal Partners.* NARUC welcomes and appreciates federal technical assistance that member commissions receive from DOE and other federal initiatives, including the NSTC Smart Grid Subcommittee, as well as the constructive dialogue of the FERC-NARUC Smart Response Collaborative, insofar as these discussions support commissions' sound decision-making processes. Federal policies should not interfere with State jurisdiction or programs but help ensure that consumers can receive the full benefits of smart grid deployments.

Sponsored by the Committees on Consumer Affairs, Critical Infrastructure, Electricity, Energy Resources and the Environment, Gas, and Telecommunications
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3 Smartgrid.gov is a good clearinghouse of information on ARRA funded smart grid projects.