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**Title: “The Regulator’s Role in Grid Modernization”**

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**Leadership from state regulators can make the Smart Grid a reality**

In previous articles we discussed the principal characteristics that define a Modern (Smart) Grid. Armed with a much clearer understanding of what is a modern grid, and what technologies it will employ, we can now address a number of less technical issues.

Grid modernization impacts many stakeholder groups including legislators, regulators, utilities, consumers, vendors, and academia. One of the first obstacles we need to address is how to involve these stakeholder groups and generate the passion needed to create a modern grid in the United States. In reality, grid modernization is a “change management” process that needs clear leadership and supportive policies. State regulators can provide both.

**State Regulators are in a unique position to lead**

In its 2004 technical report<sup>1</sup> on the “Preliminary Estimate of Costs and Benefits for the Power Delivery System of the Future”, the Electric Power Research Institute (EPRI) concluded that the benefit to cost ratio was in the range of 4:1 to 5:1. From a national perspective this is clearly a good deal. The challenge is to find ways to also make grid modernization a win-win situation for each group of stakeholders.

Business cases often focus only on benefits that flow to the individual stakeholder group. Regulatory leadership is needed to ensure all benefits are identified including those that benefit society in general. For example, such benefits as reducing the huge costs that consumers suffer as a result of power outages, reducing peak demand to mitigate rising energy prices, and enabling the broad penetration of renewable resources not only benefit each stakeholder group but society in general. Inclusion of all benefits will make the value proposition for each stakeholder more clearly understood and appreciated.

Increasing the understanding of Smart Grid concepts and the impact of current policies on these concepts is hard work. As regulators go through this process, they will have an opportunity to identify policies that are misaligned with grid modernization and to exercise their leadership position. For example, work is needed to define how costs for Smart Grid investments and how the remaining book value of assets rendered obsolete by the deployment of Smart Grid systems will be recovered.

State regulators’ relationships with utilities and consumers and their aim to provide fair regulatory treatment to both, put them in a unique position to facilitate grid modernization. And it is also fair to say that without regulator buy-in, grid modernization will be a long, hard struggle.

**Regulators are beginning to demonstrate their leadership in “raising the IQ of the grid”**

DOE’s National Energy Technology Laboratory’s (NETL) Modern Grid team conducted a series of seven regional summits across the country beginning in early 2006. Regulatory interest was low at the early summits, but dramatically increased as the later summits were held. Much of this increased interest came from state regulators who asked what they could do to assist in making the Smart Grid vision a reality. To address this increased interest, the Modern Grid team worked

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<sup>1</sup> Electric Power Research Institute (2004, July). [Power Delivery System of the Future, A Preliminary Estimate of Cost and Benefits, Technical Report 1011001, \(Final Report\)](#).

with several state regulators and provided specific technical assistance to the Public Utilities Commission (PUC) Ohio and the Public Service Commission (PSC) Missouri during 2007 – with continued support expected in 2008.

Interest in grid modernization by state regulators continues to grow. The formation of the National Association of Regulatory Utility Commissions (NARUC) – Federal Energy Regulatory Commission (FERC) Smart Grid Collaborative was recently announced. Increased dialogue among FERC, NARUC and the states should put state regulators in more of a leadership role. This role will give them the opportunity to better understand Smart Grid concepts and help them identify what policy changes are needed to stimulate progress in grid modernization. The result should be an increased focus on making the Smart Grid a reality.

### **The leadership of state regulators just might get the ball rolling**

We believe the transition to the Smart Grid will be a transformation that involves the broad penetration and deep integration of new and smart technologies. This transition will also create many new options for consumers, exciting new opportunities for investors, and a huge benefit to our society.

Creating the understanding, alignment and motivation to participate in that transition among a “critical mass” of stakeholders is essential. By changing traditional policies – consistently among states - to provide the appropriate incentives and to remove existing disincentives, state regulators can achieve the alignment and motivation needed to address this “change management” challenge and to advance the state of grid modernization in the United States.

Regulators are encouraged to increase their understanding of Smart Grid concepts and the potential pathways for getting there. Including utilities, vendors, and consumers in this quest for understanding is essential. A great deal of this information is available on the NETL website:

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