

NASPI Conference
October 12-13, 2011

Wide Area Monitoring, Visualization and Control

Analytical approach for assessing impact and benefits

Scope for Technology and Impact Analysis

Build Metric Analysis:

Technology configurations, costs, functionality, geography

Impact Analysis:

Peak and overall demand reduction

Operational efficiency from AMI and DA

Energy efficiency improvements from DA

Distribution system reliability

Application and impact from synchrophasor technology

Consumer behavior studies

SGDP technology performance and impacts (TPRs)

**Project
Reporting**



Overall Objective: To determine how smart grid technologies improve transmission system operations and derive the associated benefits.

Analysis Objectives

Understand the nature and scope of synchrophasor technology deployment and how these new tools can be used to improve grid reliability and operations. Identify key capabilities of the technology and how they contribute to benefits. Determine the next steps for advancement along the maturity curve.

Key Questions

- What technologies are being deployed, to what extent and at what cost?
 - How much of the transmission system is visible?
- How is the technology changing control room operations?
- How is reliability and grid security being improved as a result?
- Are there efficiency improvements?
- What is the value proposition of the technology?

Synchrophasor technology is being deployed to improve grid reliability and operations, but it may be difficult to show measurable impacts in time.

Issue/Challenge	Synchrophasor technology is new, and most grid operators and engineers have little or no experience with using it in the control room.
Collaboration Approach	Work with the synchrophasor project teams to demonstrate how synchrophasor technology is being adopted in control rooms, and how grid operators are using it.

Issue/Challenge	Major system disturbances are relatively infrequent, limited data may be available related to how synchrophasor technology is improving reliability.
Collaboration Approach	Collect major event reports from NERC and OE, and work with the synchrophasor project teams to examine any events that are detected with PMUs or advanced transmission applications.

Some SynchroPhasor applications can be implemented now, while others require further development and pilot testing.

