
**Massachusetts Grid Modernization Working Group
Steering Committee
Draft Goals**

January 18, 2013

1. The Goal of Grid Modernization Working Group¹

To help Massachusetts establish regulatory policies and a road-map that will enable Massachusetts electric distribution companies and their customers to take advantage of grid modernization opportunities, both in the short-term and over the long-term. Specifically, ensuring that electric distribution companies adopt grid modernization technologies and practices in order to:

- enhance the reliability of electricity service;
- reduce electricity costs; and
- empower customers to adopt new electricity technologies and better manage their use of electricity

2. Grid Modernization Opportunities

Grid modernization opportunities include the following:²

- 1) reduce frequency and duration of customer outages through automated, remote-controlled grid devices and real-time communication to the distribution companies of outages and infrastructure failures;
- 2) provide customers with the information, price structures, technologies, incentives, and tools to empower them to use electricity more efficiently and reduce their individual energy bills;
- 3) improve the operational efficiency of the grid, particularly during peak times when the grid is most stressed and electricity is most expensive;
- 4) reduce transmission and distribution system operation, maintenance, and construction costs by reducing electricity demands at times of system peaks;
- 5) reduce New England wholesale and retail electricity prices, by reducing electricity demand at times of system peaks;
- 6) facilitate the integration of distributed generation resources and new technologies, such as renewable energy technologies, combined heat and power, energy storage, and electric vehicles;
- 7) enhance the success of the Massachusetts energy efficiency initiatives, through the use of marketing campaigns and the advancement of technologies that both reduce peak demand and save energy; and
- 8) reduce greenhouse gas emissions from the electric sector by: increasing the operational efficiency of the grid, reducing the need for the high emissions

¹ Based on DPU NOI

² See DPU NOI, pages 3&4.

generating plants; empowering customers to use energy more efficiently; and facilitating the integration of demand resources into the grid.

3. Potential Barriers and Challenges to Implementing Grid Modernization under Current Practices³

- 1) Utility financial interests and incentives may not be well aligned with the goal of taking full advantage of grid modernization opportunities.
- 2) Current regulatory policies may not provide utilities with sufficient direction regarding grid modernization investments. This is particularly true with regard to regulatory review, cost recovery, and time varying rate policies.
- 3) Assessing the costs and benefits of grid modernization is challenging, and the framework has not been defined. Some of the benefits are difficult to quantify and monetize, and some of the benefits and costs are experienced differently by different stakeholders. Also, a large portion of the costs may be experienced in the short-term while most of the benefits may not be experienced until well into the future.
- 4) Balancing the benefits of increased reliability against increased costs is complicated given the absence of clear established cost-effectiveness methodologies
- 5) Some customers may be at risk of experiencing higher costs without experiencing comparable benefits.
- 6) The scope of the issues is broad and complex. There are many overlapping and inter-dependent issues to understand and assess. There are many different actors and stakeholders involved, many of whom do not coordinate on these issues.
- 7) The pace of technological change, and the potential for technological obsolescence, increases the complexity of the issues.
- 8) In order to obtain some of the benefits of grid modernization it will be important to engage customers: to respond to time-varying rates, to install demand response and efficiency technologies, and to install distributed generation and storage technologies. Customer engagement may be uncertain, may vary significantly across customers, and may be highly dependent upon the types of technologies and programs offered them.

³ Barriers list is an amalgam of barriers and challenges voiced at the Kick-Off Workshop and first Steering Committee meetings, the NOI, etc.