



July 23, 2013

Mark D. Marini  
Secretary  
Department of Public Utilities  
One South Station  
5th Floor  
Boston, Massachusetts 02110

Dear Sir:

Please accept the enclosed comments from the BRIDGE Energy Group with respect to the "Report to the Department of Public Utilities from the Steering Committee" ("Report") filed on July 2, 2013, in the Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid, D.P.U. 12-76.

BRIDGE was very pleased to have participated in this important investigation into the future of Grid Modernization in the Commonwealth of Massachusetts. As an overarching comment we believe the Mass DPU acted wisely to conduct a fact finding and collaborative process to further understand the issues surrounding investment in advanced grid infrastructure. We believe the time and effort devoted to this deliberative effort and report of the Steering Committee will provide lasting benefit to the Mass DPU, the distribution utilities, stakeholders and most importantly ratepayers.

We hope that our comments are helpful and contribute to your consideration of grid modernization policy and ultimate deliberation of specific utility proposals. It was a privilege to have taken part.

Sincerely,

/s/ David J. O'Brien

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## **I. Overview of BRIDGE Energy Group**

We believe it is important for the DPU's consideration of our comments that we briefly describe our company, our values, where we fit in the electric utility industry and what we offer our clients. By having this information it can provide some insight into the foundation of our views. BRIDGE Energy Group is a consulting and integration solutions company, focused exclusively on the Utility industry. Clients leverage BRIDGE's business, Information Technology (IT) and Operational Technology (OT) domain expertise to improve their grid reliability, asset and workforce management and customer services.

BRIDGE is a vendor and solution agnostic consultant that is not tied to a particular product or platform. Our role is to position our clients for sound investment in grid modernization infrastructure through long term focused strategy founded upon industry standards such as the NIST Interoperability Framework. As a system integration provider our job is to bring diverse technologies, products and systems together to ensure project objectives are met. A way to look at BRIDGE is that we help our clients leverage their core investment in grid modernization to extract incremental value. Value is achieved when the various systems and assets they support are integrated and internal business processes are optimized. We are passionate about the transformative effects of grid modernization and how enhanced operational capabilities will benefit consumers and society as a whole. Founded in 2004, BRIDGE is headquartered in Marlborough, MA.

## **II. General Comments**

### Importance of the Docket 12-76 Steering Committee Report:

We commend the Mass DPU for conducting this process. In all candor early planning, issue identification and foundational policy development with respect to grid modernization has not consistently occurred across the U.S. Certainly the accelerated timeframes within the ARRA funded smart grid programs did not allow for significant advance strategy and policy deliberation and the adjudication of utility projects by utility commissions were made more difficult as a result. The Commonwealth will be served by the disciplined process, broad stakeholder involvement and deliberative identification of issues, challenges and policy options.

### Regulatory Policies Conducive to Grid Modernization:

We were very pleased to be the initial author of the Utility of the Future, Today (UOF) regulatory model. We benefitted greatly from the collaboration with the Clean Energy Caucus led by Janet Besser, the iterative evaluation through the committee process and ultimately joint drafting with Henry Yoshimura of ISO-NE and Peter Zschokke of National Grid. The final product is a true consensus framework. It is designed to answer one of the central challenges in the NOI, to develop regulatory policies that will facilitate grid modernization investment. We sought to find a new regulatory “equilibrium” that balances more clarity regarding the approval of utility investment to be recovered in rates with greater accountability for performance by utilities post investment through robust metrics.

The model prescribes multi-year grid modernization plans that are expected to address key policy, system and customer objectives that are evaluated under a cost effectiveness framework to ensure long term benefit for ratepayers. Once adjudicated and approved the utilities can focus on implementation over timeframes that match the duration

required to install devices (meters, switches, etc.) and institute the in depth systems and business process adjustments necessary to deliver value to ratepayers.

Stakeholder, Customer Engagement Critical:

The UOF model contemplates that utilities undertake a significant, early stakeholder engagement process. Engaging, educating and working with customers were topics that were not specifically addressed in this process or are addressed to a great extent in the Report. Like policy development for grid modernization. We strongly suggest that this area be given due consideration as the DPU considers this Report and the ultimate consideration of utility petitions for grid modernization investment. Like policy development in this realm, the engagement of customers and stakeholders has an uneven record to this point. Some utilities, and states, have done a very effective job engaging customers, making sure they are familiar with what is being done and capable of leveraging their new ability to manage their consumption or report an outage. In those cases the results speak for themselves, while in other jurisdictions there have been considerable controversy. We encourage the DPU to look at how we describe stakeholder engagement in the UOF Framework.

The Importance of Clear Policy Foundation & Functional Capability:

There has been uneven policy development across the country with respect to so called Smart Grid investment. There have been numerous cases where the policy discovery and formation did not occur prior to utility investment. The Report of the Steering Committee provides the sort of foundation for the Mass DPU to follow a disciplined sequential deliberation of utility Grid Modernization Plans that connects policy objectives to functional capabilities that are necessary to deliver long term value to ratepayers and society as a whole.

There is a sequential discipline that the DPU can follow now having this report. As you review the early chapters that detail the taxonomy clear connections can be made between objectives such as increased DG, lower carbon emissions, shortened outages to functionalities of the various components.

By following this sequential discipline the DPU can be assured that the investment that is proposed by utilities meets the objectives of the Commonwealth as defined in statute, utility precedent or from this just completed stakeholder process. Further, if utilities follow this discipline they can be reasonably assured that they are making prudent investment decisions that meet the expectations of regulators and policymakers. There is a general reduction in the uncertainty for both sides of the regulatory process.

We also must emphasize the importance of industry standards such as the NIST Framework. We do agree with the NECEC in their comments that the time is now to move forward with grid modernization investment recognizing it is a dynamic environment and there will be much to learn in the years to come. By relying upon sound industry standards and functionality that meets state objectives (as opposed to specific technology or vendor assessment) the DPU can assure that grid modernization investment will stand the test time. Further, following industry standards ensures that Massachusetts is in line with the broader market norms which will reduce the risk of early obsolescence.

#### Grid Modernization Critical to Ratepayer Interest & Achievement of State Policy Goals:

Grid Modernization represents a step change in the degree of sophistication of the grid, how it is operated, maintained and how customers are served. Consistent with the comments from the NECEC we would urge the DPU to act now on Grid Modernization and to welcome petitions from the distribution utilities to make these critical investments. Digital connectivity and information technology has transformed American industry in the past two

decades greatly improving productivity and our global competitiveness. Utility ratepayers have this functionality in every facet of their life but with their electric utility.

The fundamentals of digital connectivity can greatly improve the operational integrity of the grid and empower consumers. Advanced metering and various tools to engage customers provide us with the means to take individual energy efficiency and demand response to a higher level which is so critical given continuing growth in peak demand requiring investment in transmission and generating capacity.

In recent years New England has seen a series of harsh weather events and extended outages that have frustrated regulators and consumers. Distribution automation infrastructure greatly enhances operational visibility and self-healing such as remote fault identification and remote fault isolation. This so called “Grid Facing” infrastructure can reduce the number and size of outages and combined with advanced metering (to identify exactly who is without power) will reduce outage duration.

Massachusetts has been a leader in energy efficiency making a profound difference in the consumption of electricity, its cost and environmental impacts. Advanced voltage regulation (volt/var control) and Conservation Voltage Reduction (CVR) can eliminate wasteful energy consumption on the grid by setting voltage level at the precise level necessary to provide adequate service.

The Commonwealth also has been a leader in distributed energy and renewable energy resources at the grid and customer level. As we increase the density of these resources there are operational challenges to balance supply and demand on the system. The transition to a more distributed grid is greatly aided by increased operator visibility and self-healing on the grid in combination with end use customer efficiency and demand response.

In our view, Grid Modernization infrastructure introduces broad new functionalities that will allow greater energy efficiency (individually and on the grid) and reliability, thus

enhancing the state's ability to meet its policy objectives. The Report of the Steering Committee provides an excellent survey of these capabilities.

Cost Effectiveness Framework:

We also believe the value provided by utilities with this investment should be subjected to a sound cost effectiveness analysis process. We concur with the NECEC that “the business case approach to analyzing the benefits and costs of distribution company investments in grid modernization is the best way to address not only benefits and costs, but also risks and uncertainties.”

Meter Functionality:

We did have a concern with the review of metering functionality during the process. Any incomplete characterization of meter functionality has the potential to undermine the sequential discipline we cite in our comments. We found it suboptimal to have the functionality of metering platforms (AMI vs. AMR) to be represented in vague terms in the source material. In our view there are very clear functional distinctions between AMR and AMI and we detail our thoughts in our comments on Chapter 4. To position a metering solution, or any other item of grid modernization, as being a “Maybe” instead of a simple “Yes” or “No” in response to functional capability does not provide the DPU with clear information.

**III. Chapter Specific Comments**

Chapter 4, Section 4.3 starts to discuss the issue of metering capabilities currently at the Mass Distribution utilities and characterizes through detailed data request responses and the “Metering Functionality Matrix” that was developed, the varying functional capabilities of AMR versus AMI based metering systems.

General:

Our overall comments are to place a strong emphasis on adherence to established industry standards (NIST) that promote open standards over proprietary solutions. There is an ever strengthening foundation of standards in approach, measuring capability and value that are across the industry. It is vitally important that from a consumer interest/risk standpoint that adherence to established industry standards be required. By following industry standards the Mass DPU can be assured that the utility investment that results will fall in line with national instead being a one off Massachusetts solution that will likely prove obsolete or cost prohibitive to support. This is a critical risk mitigation step.

From a consumer interest perspective it is vitally important to mandate to the degree possible open source/interoperable solutions. The metering platforms that meet NIST standards are less susceptible to early obsolescence. One off proprietary solutions can lead to functional dead ends and therefore to stranded investment.<sup>1</sup>

Another overarching concern we have with the meter functionality matrix at this point is to ensure there is consistency and clarity. That when we display different scenarios that a consistent measurement of functionality is applied. There are multiple cases where functional modes are answered with a “maybe” or “not sure”. We would suggest that this analysis should be based in what we know as opposed to speculation. Further, when we consider those metering solutions that

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<sup>1</sup> The Illinois Smart Grid Collaborative framework is one that has been introduced to the Mass Smart grid Collaborative for review and should be given strong consideration for use. Other states that have already developed a framework to evaluate utility smart grid investments (Illinois, California) to name a few, have taken into account the differentiation in cost for systems that are open source versus proprietary. When analyzing the economic life cycle the investment needs to consider in totality.

have varying levels of capability that the incremental cost and/or opportunity cost is considered. If for example collaborative members or the Mass DPU ultimately places a high value on outage restoration, those metering scenarios that do not enable advanced outage restoration represent an opportunity cost.

Comments to the Functionality tab:

For functionality there are 3 types of AMI - Itron Ami, Unitil AMI and Full AMI. In the industry the DOE has defined AMI as single suite of functionality. Perhaps the three types represent deviations of AMI but there should only be a single AMI category represented. We do not see consideration of recognized open standards in functionality assessment. We are concerned that in the display of the data that those not conversant in the distinctions here would conclude that an AMR system and AMI system are interchangeable. This is highlighted by stating a mobile AMR and an AMI meter can transmit to devices in the house. (These devices are presumed to be ZigBee devices but the transmissions are different).

With respect to Home Area Networks (HAN) - It is not clear if the HAN communication to the meter is an industry recognized standard or proprietary. Further it is also not clear if the HAN contains consumer security protections.

We would suggest that in ultimate deliberation of grid modernization plans that the standard of assessment should draw clear lines of functionality where a particular metering platform can (“yes”) meet expectations or not (“no”). Responses such as “Maybe “or “not readily” could be misleading and would undermine the sequential discipline we reference in our overall comments. The DPU is best served when a clear line of causation can be drawn from objectives to infrastructure that provides the solution or capability. If there is a cost to allow a meter platform to

meet a particular criteria (to go from maybe to yes) the incremental cost should be made clear. If the meter functionality source material is to be used further by the DPU perhaps the Cost Tab should reflect the functionality tab and have an entry that states “included” or extra .

Comments on the Incremental Functionality tab:

A clear description of how a feature may be enabled should be required within each solution. This should include footnotes on the worksheet and any function that is described requires a Definition on the “Definition” tab.