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July 24, 2013

VIA E-MAIL

Mark D. Marini, Secretary
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**RE: D.P.U. 12-76, Comments on the
*Report to the Department of Public Utilities
from the Steering Committee (July 2, 2013)***

Dear Secretary Marini:

By Vote and Order dated October 2, 2012, the Massachusetts Department of Public Utilities (“Department”) opened an investigation on its own motion into Modernization of the Electric Grid, D.P.U. 12-76 (“Order”). This inquiry is a non-evidentiary proceeding initiated by the Department “...to investigate policies that will enable Massachusetts electric distribution companies and their customers to take advantage of grid modernization opportunities.” Order at 1. The overarching purpose of the Department’s inquiry is “...to solicit input from stakeholders that will guide the Department’s approach to grid modernization over the short, medium, and long terms.” *Id.*

On July 2, 2013, a *Report to the Department of Public Utilities from the Steering Committee* (“Report”) was filed with the Department from the Stakeholder Working Group. The Report is the culminating work product from the stakeholder process envisioned by the Order and refined during the course of the investigation. These refinements are reflected in the Stakeholder Working Group ground rules. On July 10, 2013, the Department issued a Notice for

Comment explaining that the Department will be accepting written comments on the Report from any interested person/organization. As agreed to in the Stakeholder Working Group ground rules, Steering Committee members may provide supporting information and supplemental comments to the Department, so long as such information and comments are not inconsistent with the positions taken by that member in the Report.

The Massachusetts Department of Energy Resources (“DOER”) believes that a modern grid will provide improved reliability, resiliency, and cost savings for businesses and residents. The Report provides input from a broad group of stakeholders and highlights the importance of transparency as we modernize our grid. DOER was an active participant in the development of the Report, serving as one member of the 25 total organizations that comprised the Steering Committee. Therefore, in accordance with the Notice for Comment, DOER is pleased to provide the following supporting information and supplemental comments on the Report to the Department.

I. Background.

DOER views grid modernization as a necessary enabler for a prosperous Commonwealth. Modernizing today’s grid will require a unified effort by all stakeholders aligned around a common vision. While the current power delivery infrastructure served our electric needs well in the 20th century, the demands and expectations in the 21st century seek new ways in which power can be generated, delivered, and used in ways that minimize environmental impacts, enhance markets, improve reliability and service, reduce costs, and improve efficiency.

The threats posed by climate change, physical and cyber attack, along with advances in markets and technology provide the opportunity to transition our century old electric delivery system to a modern and dynamic grid. In addition to the traditional infrastructure approach of large, remote, centralized generating stations providing energy to consumers using extensive transmission systems, this vision of a modern grid recognizes the major benefits the distribution system and end user involvement can provide. By blending the traditional centralized model with one that embraces distributed resources, demand response, advanced operational tools, and networked distribution systems, we can enjoy the benefits of both and minimize the negative aspects of each. The application of modern computing, communications, and materials sciences will enable this transformation. This vision guided DOER’s participation in the development of the Report.

II. Supporting Information and Supplemental Comments on the Report.

1. DOER Supports the Department’s Goals for a Modernized Grid.

DOER views the goals, originally identified in the Order, and reiterated in the Report as appropriate goals for a modernized grid. As identified in the Report, the goals are to “enhance the reliability of electricity services...; reduce electricity costs...; empower customers to better manage their use of electricity...; develop a more efficient electricity system...; promote clean energy resources...and; provide new customer service offerings.” *See*, Report at 8. The Report appropriately notes that there may be tradeoffs in attempting to meet all goals simultaneously. The Report also recognizes that there are a suite of opportunities associated with a modern grid. Report at 8-9.

2. The Department should follow the Principles and Recommendations Supported by DOER.

DOER supported numerous principles and recommendations in Chapter five of the Report, which DOER urges the Department to follow for the development of a modern grid. Specifically, DOER strongly urges the Department to establish a policy and regulatory framework to enable grid modernization investments; identify goals and objectives; oversee development of multi-year plans, implementation, and enable sufficient cost recovery. Additionally, DOER advises that grid modernization plans account for multi-year objectives and long-term net-benefits. Furthermore, as part of the planning process, DOER strongly recommends that the Department require the consideration of distributed energy resources and identify opportunities where any such investments (including 3rd party investment) can increase reliability and reduce ratepayer costs.

DOER would also like to highlight the importance of the recommendations that increase transparency about the readiness for each utility to receive ever growing amounts of distributed generation (“DG”). DOER maintains that the grid modernization planning process should accelerate DG integration in the Commonwealth in meaningful and responsible ways. To this end, DOER was heavily involved in assisting the Stakeholder Working Group with the identification of equipment that would be regarded as modern, automated, or capable of accommodating reverse power flow. *See*, Report at Section 4.1 (including Grid Facing Utility Data Responses, referenced therein). DOER considers this particularly important for accelerating the integration of DG because the expense and time to interconnect to utility systems have a significant bearing on financial viability, which typically does not become evident until entities file an application for interconnection.¹

3. The Department should follow the “Utility of the Future” Regulatory Framework or certain complementary or targeted regulatory policies.

The Utility of the Future regulatory framework is detailed in Chapter Six and Appendix III of the Report. *See*, Report at 67-69 & 117-123. While DOER supports this framework, the Department, in its analysis, should carefully consider the role of incentives for grid modernization, beyond those incentives that are part of the current regulatory scheme. Further, DOER is also in support of certain complementary or targeted regulatory policies, including (a) Distribution Services Pricing with Transparency; and (b) Regulatory Approval for Time Varying Rates and Direct Load Control. *See*, Report at 69-72.

4. The Department Should Follow the Clean Energy Caucus’ Business Case Approach.

Among other options, the Report includes the Clean Energy Caucus’ business case approach to evaluate the benefits and costs of grid modernization investments. *See*, Report at 79-80 & 82-86. DOER supports this approach and urges the Department to proceed in accordance with its terms.

¹ Consistent with the goal of promoting clean energy resources, DOER takes this opportunity to update the Department about a number of important available sources of information related to the integration of distributed energy resources. DOER provides in “Attachment A,” a list of studies and resources that should be considered essential to creating a foundation in establishing a policy for integrating distributed generation (DG) in the context of modernizing the grid. Furthermore, DOER is pleased to announce it has established an internet resource that will continue to add new information resources and updates as they become available (see the website entitled DG and Interconnection in Massachusetts: <https://sites.google.com/site/massdgc/>).

5. The Department should Move Deliberately to Provide Necessary Guidance and Open Further Appropriate Proceedings.

Consistent with the recommendation of DOER, the Clean Energy Caucus, and National Grid included within Chapter 8 of the Report, "...the Department should provide guidance to utilities as soon as possible, preferably by October 1, 2013, and encourage utilities, in the context of their next base rate proceeding, to include a grid modernization investment proposal consistent with the Department's directives." Report at 93. Moreover, the Department should open a separate investigation into time varying rates and open a targeted electric vehicle proceeding. Report at 93 and 96.

For the electrical vehicle proceeding, DOER respectfully refers the Department to section 8.4 of the Report. In this section, DOER and others have specifically identified barriers, principles, and issues, which culminate in a recommendation for the Department to open a separate proceeding to consider the range of issues associated with electric vehicles and their effect on the electric grid. In addition to what is found in the Report, DOER sees two additional overarching points. First, based upon experience in other states, DOER believes that the results of proceedings are most beneficial and lasting when the applicable findings are subsequently bolstered or enacted through legislation. *See e.g.*, Report at 97, FN. 65. Second, consistent with the barriers, principles and issues identified in the Report, the proceeding should be appropriately tailored to address each of the following:

- i. delineate the Department's jurisdiction over all types of electric vehicle ("EV") charging stations, including utility, municipally, or privately-owned stations, as well as non-utility, third-party charging station operators. This should include an evaluation of the rate and manner in which a customer is billed for charging services and if utility-owned or operated, how cost recovery for infrastructure, metering and billing systems is managed (*i.e.*, rate based or otherwise allocated);
- ii. identify the steps that address customer privacy concerns and ensure that utilities are aware of new charging station locations and/or EV purchases to forecast EV loads to proactively address and minimize the impact of EVs charging on electric demand and transmission and distribution facilities during periods of peak demand;
- iii. establish EV-related reporting and analysis requirements for utilities;
- iv. develop of procedures for accelerated utility review and service upgrades related to EV charging;
- v. evaluate the ability to use electricity from vehicle to home or business and the purchase of stored energy back from EV owners (vehicle-to-grid), and identify changes that would facilitate these approaches;²

² Fuel-cell EVs also have the potential to be connected to the grid. In order to assist in the transition for these vehicles into Massachusetts, the Department could utilize this proceeding to clarify its regulatory authority over hydrogen that is produced from natural gas and dispensed for use as a motor vehicle fuel in fuel-cell EVs.

- vi. analyze rate-setting mechanisms, including time-variable rate design for residential customers and incentives for off-peak charging, as well as additional metering policies or protocols that may be needed to accommodate various charging options;
- vii. establish utility responsibilities and content of consumer (residential, municipal, and commercial customers) education regarding the costs and benefits of EVs and EV charging;
- viii. review methods to maximize EV charging station owner and operator participation in the use of Open Charge Point Protocols;
- ix. coordinate, to the maximum extent practicable, with other state Public Utility Commissions and ISO New England to maximize consistency among state and regional policies; and
- x. ascertain whether Mass Save audits should include information on EVs and EV charging stations, conduct audits, or provide financial support for installation of EV charging stations.

Thank you for your consideration of the preceding supporting information and supplemental comments.

Respectfully submitted,

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES

By its attorney:

/s/

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Attachment A: Supplemental Grid Modernization Materials³

The SMART GRID: An Introduction

Exploring the imperative of revitalizing America's electric infrastructure. How a smarter grid works as an enabling engine for our economy, our environment and our future. The referenced web page provides links to further reports that target the interests of stakeholder groups, including policy-makers. Prepared for the U.S. Department of Energy under contract No. DE-AC26-04NT41817. Subtask 560.01.04 (2008-2009)

<http://energy.gov/oe/technology-development/smart-grid/smart-grid-primer-smart-grid-books>

Effects of Rural Electrification on Distributed Generation Siting and Interconnection in Massachusetts

A Report prepared for DOER with utility peer review and signoff. The development of larger scale (greater than 25 kW, up to several MW) distributed renewable energy resources requires upgrades to electrical distribution lines for interconnection to the utility grid, including access to three phase power lines and other means to smooth out voltages from intermittent resources. The lack of three phase power lines and other interconnection challenges in rural Massachusetts has restricted Distributed Generation (DG) in these rural areas. Meanwhile, rural regions of the Commonwealth have important land and renewable energy resources to contribute to the renewable energy market expansion and to support local businesses and economic development. (April 2013)

https://docs.google.com/file/d/0B836U49Yrh_QaVF0bjl3XzE0QzQ/edit?usp=sharing

DER Integration Materials of the DG Collaborative

A "[Guidance Document for Customer Owned Distributed Generation Applications: A Working Draft](#)" was prepared by KEMA Consulting, Inc, based on Distributed Energy Planning Workshops commissioned by the Massachusetts DG Collaborative in 2006 to describe options to accommodate the use of DG in support of the electric distribution system, including "equipment upgrades associated with running customer owned generation that is compatible with the connected utility distribution system."

The Distribution Planning Working Group of The MA DG Collaborative created this Guidance document using a consensus based approach with utility representatives to explain potential challenges and solutions for distributed generation installations that serve the generation owner, particularly in the event of widespread and substantial adoption of such DG. (Fall 2009)

[The DG Collaborative Report](#) describes the work of the Distribution Planning Working Group, which identified "Technical Challenges of DER Integration" described in [Attachment H](#) of that filing. (June 2009)

Guidance Document:

https://docs.google.com/file/d/0B836U49Yrh_QNHBvdXVkbmo1ZEU/edit?usp=sharing

DG Collaborative Report: <http://www.env.state.ma.us/dpu/docs/electric/02-38/63006mdgcr.pdf>

Attachment H: <http://www.env.state.ma.us/dpu/docs/electric/02-38/63006mdgcrath.pdf>

Creating Incentives for Electricity Providers to Integrate Distributed Energy Resources: A Report of the EPRI Distributed Energy Resources Public/Private Partnership (November 2007)

³ DOER is hosting a web page dedicated to the topic of Grid Modernization information resources at: <https://sites.google.com/site/massdgc/home/interconnection/distributed-generation-working-group>

DOER was primary program manager for this US-DOE funded multi-state collaboration. It addresses business models to advance the integration of Distributed Energy Resources, including utility ownership of DER.

https://docs.google.com/file/d/0B836U49Yrh_QTGduUjk2RFpoTzg/edit?usp=sharing

Other Notable Grid Modernization Studies/Materials

Storm Reconstruction: Rebuild Smart Reduce Outages, Save Lives, Protect Property, by NEMA. Resilient and reliable power is critical for first responders, communications, healthcare, transportation, financial systems, water and wastewater treatment, emergency food and shelter, and other vital services. When smart technologies are in place, power outages are avoided and lives, homes, and businesses are protected. (2013)

<http://www.nema.org/Storm-Disaster-Recovery/Documents/Storm-Reconstruction-Rebuild-Smart-Book.pdf>

Integrated Distribution Planning Concept Paper: A Proactive Approach for Accommodating High Penetrations of Distributed Generation Resources

The Interstate Renewable Energy Council and the Sandia National Laboratories have co-authored a strategy paper on accommodating high levels of distributed generation resources on utility distribution systems. (May 2013)

<http://www.irecusa.org/2013/05/new-proactive-planning-strategy-proposed-for-distributed-generation/>