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Via E-Mail

April 18, 2013

Members of the Grid Modernization Steering Committee
c/o Jonathan Raab, Raab Associates, Ltd.
Tim Woolf, Synapse Energy Economics, Inc.
Massachusetts Department of Public Utilities
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Boston, MA 02110

Rockport, ME
Boston, MA
Providence, RI
Hartford, CT
Ottawa, ON
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Re: D.P.U. 12-76: Encouraging the use of Plug-In Electric Vehicles

Dear Fellow Members of the Steering Committee:

I am writing to request that the Steering Committee develop and submit to the Department of Public Utilities (the "Department") a set of principles designed to assist the Department in facilitating the deployment of plug-in electric vehicles in Massachusetts. At the outset, ENE commends the Department for opening an inquiry to identify potential grid modernization strategies that can enhance the reliability of electricity service, reduce electricity costs, and empower customers to adopt new electricity technologies and better manage their use of electricity. ENE is particularly pleased to see that the Department, in its Order opening this investigation, identified a key component of this inquiry relating to electric vehicles, *i.e.*, to "facilitate the integration of ...new technologies, such as ... electric vehicles."¹

Plug-in electric vehicles (PEVs) have tremendous potential to reduce our expenditures on imported gasoline and diesel, and to advance the Commonwealth's clean energy and climate goals. The Massachusetts Grid Modernization investigation is a well-timed opportunity for the Department and Steering Committee to set in motion the structural reforms necessary to ensure that PEVs are integrated into the distribution system in a manner that enhances system reliability and efficiency, minimizes costs, protects consumers, and maximizes environmental benefits.

Recognizing that the broad scope of the investigation and its short timeline may not permit the Steering Committee to develop focused recommendations on the range of issues important to PEVs, ENE asks the Steering Committee to consider and adopt a set of principles. These principles will ensure that the recommendations in the final report are consistent with removing barriers to PEV adoption and will guide the Department's future approach to PEV-related issues.

¹ See Department of Public Utilities, D.P.U. 12-76, [Vote and Order Opening Investigation: Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid](#) (October 2, 2012) at 3-4.

I. PEV Principles and Goals

As part of this docket, the Steering Committee should develop a set of principles and goals that will guide the Department in its approach to PEV-related issues and provide a framework for how Massachusetts should confront the barriers to PEV adoption. At a minimum, these principles should (a) include a consideration of the extent of the Department's jurisdiction over PEV-related matters, (b) advance environmental, energy security, economic and consumer benefits of PEVs; (c) prioritize positive consumer experiences through education and barrier removal; and (d) promote PEV operational cost reductions.² Below, we highlight several principles that we believe should be included in the recommendations from the Steering Committee.

II. Infrastructure Requirements, Utility System Planning, and Rate Structures

Broad adoption of PEVs will require some level of investment in charging infrastructure. In the near term, infrastructure concerns will center on localized impacts to the distribution system. There could be impacts from EV load on transformers and distribution lines in older parts of the system, requiring upgrades in areas with high concentrations of PEVs. Many Level 2 home chargers available today operate at 7.2 kW, but some Level 2 charging can operate at up to 19.2 kW.³ Over the longer term, impacts of PEV charging could have broader effects the distribution system, but the policies that are put in place now will set market and regulatory expectations going forward.

Principles:

Encourage Off-Peak PEV Charging. Optional time-variable rate structures send the appropriate economic signals to take advantage of off-peak grid capacity for PEV charging. Time-variable rates will encourage PEV owners to maximize vehicle charging during periods of lower impact of the grid. Encouraging off-peak charging will reduce potentially costly investments in distribution infrastructure in a manner that is consistent with most driving patterns.

Facilitate Local Load Forecasting. Electric distribution companies should forecast loads as PEVs are integrated into the system, including the impact of system-wide and localized potential for added load and potential reliability concerns where targeted investments may be necessary.

Promote Efficient, Responsible Data Sharing. Distribution utilities and the Registry of Motor Vehicles should establish a system of sharing summary data of EV registrations, with appropriate privacy protections, in order to understand and plan for potential impacts on the distribution system.

² It may be instructive for the Department to review proceeding R. 09-08-009 by the California Public Utility Commission in which it investigated a host of PEV related issues. Summary information available at: <http://www.cpuc.ca.gov/NR/rdonlyres/BB44936E-0802-4D8D-BDE4-D5F2349A3ED7/0/AFVFactSheet.pdf>

³ U.S. Department of Energy Alternative Fuels Data Center. Available from: http://www.afdc.energy.gov/fuels/electricity_infrastructure.html.

III. Electric Vehicle Supply Equipment Ownership

The grid modernization framework will play an important role in encouraging innovation and competition in the Electric Vehicle Supply Equipment (“EVSE”) market. The full range of charging infrastructure ownership models and the impacts on ratepayers should be considered. We believe that charging infrastructure policies should be developed with the goal of promoting competition and aligning financial incentives in a manner that avoids over-investment, particularly in the context of public charging.

Principles:

Nurture Competition in the EVSE Marketplace. A grid modernization framework should establish guidelines and policies that encourage and enable competition among utilities and other market participants in the EVSE market.

Provide Regulatory Certainty for Third-Parties. A grid modernization framework should define regulatory treatment for non-utility, third-party transportation electricity providers as similar to requirements for other entities wishing to access to wholesale markets directly.⁴

IV. PEV Promotion and Education

In addition to the upfront costs of PEVs, lack of information and understanding represents a significant barrier among potential PEV buyers. To confront this challenge, the Steering Committee should encourage utilities to develop consumer education initiatives aimed at providing accurate information to potential PEV owners. Among the most critical issues that should be addressed are vehicle charging costs and time-varying rate options, residential charging infrastructure installation, the impact of PEVs on system reliability, and other information that will help minimize costs and maximize the benefits of PEVs to owners, the distribution system, and the Commonwealth’s air quality and environment.

Principle:

Develop Education and Outreach Resources. Utilities should be required to establish consumer education resources including a web presence, toll free number, the use of social and traditional media, and direct outreach to PEV shoppers concerning vehicle charging costs, time-varying rate options, residential charging infrastructure installation, and any other challenges that new plug-in EV owners may face. Ideally, these resources would also answer questions related to vehicle features and options; utilities may partner with additional stakeholders (*e.g.*, auto dealers, local building permit offices, electrical contractors, advocacy groups, trade associations, and state and municipal leaders) to ensure a wide range of potential car-buyer questions are addressed.

V. Conclusion

The Department has demonstrated leadership and foresight by addressing the wide range of issues related to grid modernization, and we urge the Steering Committee to ensure that

⁴ See Center for Climate and Energy Solutions (C2ES), [An Action Plan to Integrate Plug-In Electric Vehicles with the US Electrical Grid](http://www.c2es.org/docUploads/PEV-action-plan.pdf), March 2012, at 13-14, 17. Available at: <http://www.c2es.org/docUploads/PEV-action-plan.pdf>

grid modernization recommendations and proposed regulatory frameworks are consistent with the goals of reducing barriers to PEV adoption, reducing the impact of PEVs on the distribution system and ratepayers, and the key role utilities play in delivering the economic and environmental benefits of PEVs. We believe that the Grid Modernization docket is a unique forum in which the Steering Committee can provide guidance about how to nurture the development of PEVs in Massachusetts. We look forward to working to develop a set of PEV principles with the Steering Committee in this docket.

Sincerely,

/s/ Abigail Anthony

Abigail Anthony, Ph.D.

cc: Ann Berwick, Chair, Department of Public Utilities
Jollette Westbrook, Commissioner, Department of Public Utilities
David Cash, Commissioner, Department of Public Utilities
Kenneth Kimmel, Commissioner, Department of Environmental Protection
Mark Sylvia, Commissioner, Department of Energy Resources
Jesse Reyes, Assistant Attorney General