July 24, 2013

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

Re: D.P.U. 12-76, Investigation by the Department of Public Utilities on its Own Motion into the Modernization of the Electric Grid, *Report to the Department of Public Utilities from the Steering Committee*

Dear Secretary Marini:

Enclosed for filing with the Department of Public Utilities in docket D.P.U. 12-76 please find the Comments of eCurv, Inc. regarding the *Report to the Department of Public Utilities from the Steering Committee* in the D.P.U. 12-76 Massachusetts Electric Grid Modernization Stakeholder Working Group Process, submitted on July 2, 2013.

Thank you for the opportunity to submit these comments. Please contact me with any questions.

Sincerely,

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eCurv Comments on
Grid Modernization Working Group Report

July 24, 2013

eCurv congratulates the Massachusetts Department of Public Utilities (the Department) on initiating the Electric Grid Modernization Stakeholder Working Group Process. We applaud the completion of the report submitted to the Department by the Steering Committee of the Stakeholder Working Group (the Report).[1]

Digital technology and business model innovations can deliver the electric service improvements outlined in the Report without tradeoffs between enhanced reliability and efficient electricity pricing. These innovations will be extremely valuable to electricity consumers and grid operators. Carefully targeted public policies should foster these technologies through demonstration, deployment and commercialization. The Report provides a strong start for a process that could facilitate the market adoption of promising innovations. To achieve this result expeditiously, the Department will need to initiate bold and well-designed regulatory reforms to avoid future spending on obsolete technologies and nurture proven innovations.

eCurv has invented, patented and is commercially deploying a groundbreaking electricity management software system that arranges electric loads in a queue to lower customers' peak demand and reduce electricity costs. It is distinguished by the fact that it is fully digital, i.e., its logic is interactive and requires no human analysis or intervention, acts continuously (that is, 24 hours per day/7days a week/365days per year), and reduces peak demand without requiring an interruption of electric service. Once installed, digital electric service is imperceptible to the end user, except for its reduced electricity costs. For customers with demand-based rates, digital electric service provides savings of up to 30 percent on their demand charges.

Because at its core digital electric service is essentially an innovative application of information technology, i.e., software, the capital cost of widespread deployment is low compared to alternatives. Thus, when deployed at scale (for example, across thousands or even millions of HVAC systems) and effectively targeted (for example, integrated on the same HVAC electrical switching logic), digital electric service has the potential to provide substantial, system-wide reliability and economic benefits to the customers and operators of the electricity grid. In short, digital electric service provides a vivid example of how to achieve the goals of Grid Modernization and the Working Group.

The comments provided here by eCurv are designed to highlight and inform the recommendations in the Report that would foster the adoption of electricity management technology applied to load management, such as eCurv's digital queueing. If effectively implemented, the recommended regulatory actions would help ratepayers capture additional electricity cost savings and enable utilities to obtain significant reliability and efficiency benefits.

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1 DPU 12-76: Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities from the Steering Committee, Raab Associates, Ltd. & Synapse Energy Economics, Inc. Final Report, July 2, 2013

Time Varying Rates

First, eCurv strongly supports the recommendation in the section of Chapter 5.9 on Time Varying Rates made by the Clean Energy Caucus and the MA DOER on page 56 that states:

"...Time Varying Rates should be designed to facilitate the adoption by customers of a broad range of distributed energy resources and demand response technologies taking into account all relevant benefits and costs to enable them to capture the benefits these resources and technologies offer..."

eCurv's software delivers peak demand reductions of up to 30% for customers currently on 15-minute demand rate schedules. The net impact is a 7 to 11% direct reduction in their total cost of electricity. Time varying rates that include a 15-minute demand charge that represents at least 30% of their electric bills incentivize customers to enable their electric appliances (HVAC, pumps, motors, charging stations) to receive immediate savings on electricity costs. In addition, by continuously managing loads of a broad spectrum of customers, the technology can create a network effect that mitigates the highest system-wide peak demand events.

In short, we strongly recommend that the Department conduct a generic investigation into time varying rates. It should conclude with findings and recommendations on:

- the potential for customers to secure economic benefits through expanded use of demand-based rates;
- the potential for customers to secure system-wide economic benefits through billing of aggregated 15-minute interval measurements of their various accounts in a given region;
- regulatory policies that would expand opportunities for customers to shift to demand-based rates; and
- designs for demand-based rates that would avoid cost-shifting to other customers and accurately reflect the real cost of meeting a customer's electric peak demand.

Planning and Investment by Utilities

Second, eCurv strongly supports the recommendation made by the Clean Energy Caucus and the MA DOER in Chapter 5.2 on Planning and Investment that begins on pages 46 and 47 of the Report, which states, in part:

...Each utility should file a company-specific grid modernization plan...Each plan should indicate how the utility plans to integrate distributed resources and new technologies and services to capture the operational benefits they can provide to the distribution system, improve distribution system reliability, enhance the provision of information to support competitive retail services, and coordinate with other distribution planning activities. These resources may include geo-targeting of energy efficiency, demand response, distributed generation and storage...

In addition, eCurv strongly supports a complementary recommendation[2] that begins on page 72 of the Report that:

"...The Grid Modernization Advisory Council will facilitate the Department's review and approval process of multi-year grid modernization plans to encourage timely grid modernization investments and limit lengthy, contested regulatory processes..."

eCurv's digital queueing technology can scale from individual electric equipment to a fleet of electric loads, and ultimately to a portfolio of properties in a wide range of applications: from HVAC to refrigeration, transportation, battery charging, water, oil and gas pumping, and electric motors in general. By installing this kind of distributed technology with customers in a specific region (for example, within a substation operating area), a utility could mitigate existing grid congestion problems. A targeted deployment by a utility, imperceptible to end use customers, could deliver improved service reliability and immediate system cost savings.

In short, we strongly recommend that the Department require each utility to file a company-specific grid modernization plan that:

- analyzes the potential reliability and economic benefits of targeted deployment of demand management technologies,
- evaluates their potential for these technologies to provide least cost reliability enhancements to the grid at the distribution-system level; and
- where potential net benefits are identified, require utilities to include plans for capital expenditures to enable targeted deployments of these technologies.

Pilot Demonstration Programs

Third, eCurv recommends that, while the regulatory reforms endorsed above are under development, the Department take advantage of existing opportunities to investigate the potential for electricity management technologies to produce reliability and economic benefits through implementation of pilot demonstration programs.

One readily available opportunity to do this would seem to be offered by the process of spending energy efficiency funds under plans proposed by the Energy Efficiency Advisory Council that are approved and overseen by the Department. Amendments to the Green Communities Act enacted in 2008 directed the Council to implement programs that "...maximize net economic benefits through energy efficiency and load management resources..."[3] Yet, we note that the current three-year plans for spending those funds do not include a single investment to be made in load management technologies.

This significant oversight can be rectified, even within the time frame of the existing three year plans. Experience with these plans shows that each year, despite the best of intention and effort, not all funds are expanded on approved programs by year end, as planned. Surplus funds could

[2] This recommendation is endorsed by a sub-set of the participating stakeholders, namely: ENE, NECEC, NECHPI, ISO-NE, NEEP

[3] Statutory mandate of the Energy Efficiency Advisory Council M.G.L. c. 25, Section 22 (b)

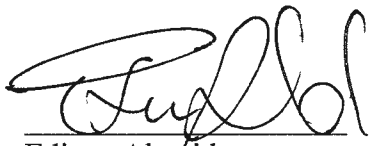
be re-programmed to demonstration programs that would evaluate the potential costs and benefits of targeted deployment of load management technologies.

Therefore, eCurv strongly recommends that the Department encourage the Energy Efficiency Advisory Council to begin work now to develop proposals for demand management pilot demonstration programs to be implemented with funds unspent at the end of the current year.

Looking ahead, the Department should encourage the Council to fulfill the mandate included in the Act by including in its next three-year plan an appropriate commitment of energy efficiency funds to support targeted deployment of load management technologies where demonstration programs have shown these technologies and services are likely to produce net system benefits.

Thank you for your consideration of these comments.

Sincerely,



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