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January 9, 2012

**To:** The Massachusetts Energy Efficiency Advisory Council (EEAC)  
**From:** A Better City's Commercial Real Estate Efficiency Stakeholder Group  
**Re:** Testimony regarding the next three-year Program Administer energy efficiency programs

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Thank you for providing the opportunity to submit written testimony to the state Energy Efficiency Advisory Council (EEAC) on the development of the next state-wide three year energy efficiency plans. The comments found in this testimony are intended as initial recommendations for inclusion in the PA three year plans. Conversations with utility executives and representatives from the state have indicated that future opportunities to provide input and recommendations will be available at a later date, and ABC and the organizations it represents look forward to continued involvement in this ongoing process.

A Better City (ABC) is a Boston-based non-profit that represents many of the Commonwealth's leading businesses, institutions, and buildings on sustainability issues. ABC is submitting this testimony on behalf of its membership. These comments represents the collected opinions of dozens of major utility customers in the Greater Boston area including some of the largest building owners, property management firms, commercial tenants, hotel chains and manufacturers in the state. Collectively, these businesses employ tens of thousands of Massachusetts residents and are substantial contributors to the funding of the utility energy efficiency programs. Additionally, they own, manage or rent tens of millions of square feet of commercial office space in Boston. Each of these companies has had direct experience with the PA efficiency programs and many of the comments in this testimony are from building energy mangers with significant on-the-ground understanding of building energy performance and energy savings technologies. While the individuals who participated in the development of this testimony are not experts in utility efficiency program regulation, they are some of the most experienced and knowledgeable energy mangers and building performance professionals in the commercial real estate industry. Recommendations from these professionals are intended to provide the utilities and the regulatory community with improved insight into the real-world realities of this critical sector.

As well, ABC is currently working with the Commercial Real Estate Working Group of the Green Ribbon Commission, founded by the Barr Foundation and chaired by Amos Hostetter. The Working Group brings together leaders in the commercial real estate sector to catalog and understand energy efficiency, set achievable goals for success, and develop initiatives to achieve the City's goals of reducing greenhouse gas emissions 25% by 2020.

In addition to being some of the largest utility customers in the state, the businesses surveyed as part of this testimony are also national leaders in championing sustainable business practices. As such, these firms are supportive of aggressive state-wide efficiency goals and well-funded utility energy efficiency programs. Massachusetts' nation-leading energy efficiency policies have supported these institutions in meeting their internal greenhouse gas and energy reduction goals and they look forward to continued, substantial funding of state-wide energy efficiency programs in the future. It is also important to note that these programs are a driver of economic

competitiveness and are a critical component in the further development of the state's innovation economy.

The recommendations found in this testimony are the result of a stakeholder process that engaged more than thirty leading Boston-area utility customers. This process included online surveys, focus groups and one-on-one interviews. In general, stakeholders were pleased with their experience with the utility energy efficiency programs, although nearly all participants recommended programmatic improvements. This feedback was generally structured into four broad categories. This testimony is organized around these thematic categories: Data and Energy Use Information; Customer Experience; Incentive Levels and Qualifying Measures; and Behavioral Programs.

#### **I. DATA AND ENERGY USE INFORMATION RECOMMENDATIONS:**

Representatives from one of Boston's top-five property owners and a national leader in sustainability practices stressed during the stakeholder process the idea that "What gets measured gets managed." Many utility users do not have access to data on their energy consumption. Other participants in the stakeholder process were in agreement that a lack of easily accessible and transparent energy consumption data is a barrier to reducing energy use for office tenants, building owners and other utility customers. The following program recommendations and process improvements were suggested to help overcome this barrier.

##### **A. SUB-METERING INSTALLATION INCENTIVES**

It is estimated that between 60 and 80 percent of energy used in a commercial office building is consumed in the tenant space.<sup>1</sup> Despite this, many commercial office properties do not currently have utility metering infrastructure necessary to provide accurate data to tenants about their energy use. Lack of energy use data is a significant barrier to action for building tenants and sub-meters can provide the granular, actionable information about energy consumption that is necessary to drive efficiency projects. In a 2009 case study, the Vornado Realty trust estimated that sub-metering of a 400,000 sq. ft. tenant space directly resulted in an 18 percent reduction in energy use.<sup>2</sup> A sub-meter enables a facility to have a direct relationship with the utility, provides customers under 300kw the opportunity to receive a free energy audit, and empowers the customer to invest in energy efficiency. Given the significant potential benefits of sub-metering, the stakeholders recommend the development of a utility sub-metering program to help defray the cost of metering equipment installation.

##### **B. AUTOMATIC ENERGY USE DATA UPLOAD TO ENERGY STAR PORTFOLIO MANAGER**

Energy Star Portfolio Manager is the only nationally accepted tool for benchmarking building energy performance. Portfolio Manager allows utility customers to organize energy use data and benchmark performance across time and against similar building types. Widespread use of this free program could improve building energy use monitoring across the Commonwealth and

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<sup>1</sup> [www.bfrl.nist.gov/buildingtechnology/documents/SubmeteringEnergyWaterUsageOct2011.pdf](http://www.bfrl.nist.gov/buildingtechnology/documents/SubmeteringEnergyWaterUsageOct2011.pdf)

<sup>2</sup>

[apps1.eere.energy.gov/buildings/publications/pdfs/alliances/20110616\\_webinar\\_creea\\_tenant\\_submetering.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/alliances/20110616_webinar_creea_tenant_submetering.pdf)

significantly aid building owners in their efforts to evaluate energy savings investments. Several utilities currently offer services that automatically upload monthly utility data into the Portfolio Manager platform. The stakeholders recommend that these programs be enhanced or expanded to encourage widespread use of Portfolio Manager.

#### C. REAL TIME ENERGY USE MONITORING

Stakeholders expressed an interest in having expanded access to real-time or interval meter energy consumption data. A number of building managers related stories of substantially lowering energy consumption by optimizing building management and operations strategies after analyzing detailed usage data. Access to real-time data is key to understanding how a building functions and helps operations managers diagnose poorly performing systems or non-optimal operations strategies. The stakeholders recommended expanding access to this type of information by providing commercial customers with web-based tools to better organize and present real-time data. Some stakeholder also expressed incentive support for continuous commissioning strategies and agreed that utility incentives to contract with companies offering services such as ABC member EnerNOC's continuous commissioning program would be welcome.

## II. CUSTOMER EXPERIENCE RECOMMENDATIONS

Many of the stakeholders engaged in the development of this testimony made recommendations for improving the energy efficiency program customer experience. Survey results indicate that larger customers, with dedicated utility account representatives were more satisfied with their PA program experience, while small and medium sized customers had a more challenging time navigating the programs. Several specific recommendations were developed by the group and these are listed below.

#### A. DEDICATED PROGRAM FOR DESIGN REVIEW OF TENANT FIT-OUT

Building owners and property managers expressed an interest in having utility representatives offer a package of incentives and single point of contact to assist during the tenant fit-out design process. With much of a commercial office building's load coming from the tenant space, the fit-out process presents a critical opportunity to encourage the installation of efficiency measures. Some stakeholders mentioned that they had previously involved the utilities in the fit-out design process, while other building owners were not aware of how best to involve the PAs. Funding a dedicated and coordinated utility tenant fit-out initiative could capture high-savings-potential lost opportunities in the commercial real estate sector.

#### B. REMOVING THE SERVICE GAP BETWEEN MEDIUM AND LARGE

Small users under 300kw are currently able to receive a free audit/assessment and limited energy efficiency services through a streamlined direct install program, which enables a smooth process resulting in quick actions being taken. At the same time, large users, typically over 700kw, are appointed an Account Executive directly from the utility to work hand-in-hand with the customer to identify energy efficiency opportunities, which also results in a smooth process and easier implementation for customers. Facilities between 300kw and 700kw, are trapped between these two programs. Removing this gap, by increasing the ceiling for the direct install program from 300kw up to 500kw and lowering the level for facilities to be appointed an

Account Executive from 700kw down to 500kw, we could serve a larger number of facilities through both programs and see a greater investment in energy efficiency improvements.

#### C. PUBLISHING POTENTIAL CUSTOM MEASURES AND REPRESENTATIVE PAYBACKS

Energy efficiency customers may be unaware of the range of potential custom efficiency measures that are available for support under the utility energy efficiency programs. Several stakeholders suggested that they felt as if they had successfully implemented all the available standard efficiency measures and were interested in going beyond this list into custom improvements. These stakeholders felt increased guidance from the PAs would be useful in developing future custom measure retrofits. The group suggested that the development and publication of an online catalog outlining past projects supported under the utility programs that provided a range of costs and potential savings could assist customers in developing custom project proposals. Others also expressed an interest in learning about new technologies that may be eligible for incentive funding under the custom measure program, and suggested an online database as a useful way to communicate this type of information.

#### D. SIMPLIFIED PAPERWORK AND CLEARER INFORMATION ABOUT PROGRAM OFFERINGS

Building owners expressed frustration with the complexity of program application forms, with one property owner explaining that it had to hire outside consultants just to complete the paperwork for a lighting retrofit project. This complexity can be a barrier for smaller companies that do not have dedicated staff to manage energy projects, with some building owners unable to divert personnel to filling out paperwork.

Stakeholders also expressed frustration with the complexity of program marketing materials. They suggested that greatly simplified program marketing materials that clearly explain all available incentives would be a major improvement. Stakeholders questioned why a one or two page document that lists all the rebate eligible measures for office buildings is not available. Participants also expressed frustration with the MassSAVE website, which was perceived to be poorly organized making it difficult for utility customers to have a comprehensive understanding of their efficiency options.

Finally, several stakeholders felt that the types of projects available as prescriptive measures are too limited and that classifying certain project types as custom measures needlessly complicates the incentive application process. We encourage the PA's to move some of the existing custom measures into the prescriptive program.

#### E. IMPROVED COORDINATION BETWEEN ELECTRIC AND THERMAL INCENTIVES

Coordinated gas and electric service delivery was a major goal of the last three-year planning process and stakeholders indicated that significant improvements have been made on this issues. Further process improvements are still possible however, including the development of integrated gas and electric comprehensive savings plans (i.e. memoranda of understanding (MOUs) between utilities and large utility customers). Negotiating a single, consolidated MOU may have significant advantages and would allow building owners to effectively leverage time and personnel.

#### F. IMPROVED COORDINATION FOR BUILDING OWNERS AND TENANTS

Landlord – tenant split incentive issues are a well-known barrier in the commercial real estate market. Depending on lease structures and utility metering configurations, incentives for energy efficiency investment may be poorly aligned. Focused utility efforts to bring both parties into the retrofit process in support of mutually beneficial building improvements could help to solve some of these challenges. In our survey, both tenants and landlords have reported issues engaging with each other on energy efficiency investment issues, and focused utility engagement on this issue could help facilitate landlord-tenant conversations that could result in energy efficiency investments.

#### G. PROVIDE ADDITIONAL FLEXIBILITY FOR PROGRAM ADMINISTRATORS

Based on feedback received from building owners and PAs there is a need for greater flexibility within the energy efficiency program for both customers and PAs. Customers have different needs and by empowering the PAs the flexibility to adjust their programming and funding to take into account specific realities of individual clients could increase the number of successfully implemented projects at a facility.

### III. INCENTIVE LEVELS AND QUALIFYING MEASURES RECOMMENDATIONS

In general, the utility program participants found the current programs to be too limited, with significant incentives for low-savings measures such as lighting, but comparatively little support for the major building infrastructure improvements that can substantially reduce energy consumption. Surveyed stakeholders would support increased flexibility in program offerings, allowing for more opportunities to find large-scale solutions that drive significant savings. For instance, one building owner reported permanently removing more than 500 lighting fixtures in a parking garage, however under current program guidelines, utility program funds could not help support this type of project. As an additional example, another building owner suggested more incentive program flexibility was needed to support dual lighting level stairway fixtures that are activated by occupancy sensors that will raise all the lights in the stairwell to 100 percent or just the floor of entry and one floor above and one floor below. These types of innovative and effective solutions are not supported under the current programs.

Many of the building owners consulted as part of this testimony feel that they have reached the limit of what can be accomplished under the current utility programs, but are certain that much deeper savings can be found in their properties. One survey participant in particular was perplexed at what it perceived as an over-subsidization of non-LED lighting measures, where little subsidy is needed to drive demand given project economics. This was weighed against the perception that incentives to retire aging but functional HVAC infrastructure are inadequate to drive investments that could result in “50 percent savings in cooling loads.”

#### A. INCREASED INCENTIVES FOR LARGE INFRASTRUCTURE PROJECTS

The Boston commercial real estate market has a significant share of its building stock that was constructed during the seventies and early eighties. Anecdotal evidence suggests that a significant proportion of these buildings have original HVAC systems. With appropriate, regular maintenance, building owners are able to maintain these inefficient systems well beyond their design lives. Retrofitting these buildings with modern equipment could reduce utility loads by up

to fifty percent, yet incentives to replace aging HVAC systems are inadequate to drive early retirement, even for the most environmentally conscious building owners. Stakeholders suggested that paybacks approaching five years are necessary to incentivize owners to make the large-scale capital investments that drive deep energy savings. The stakeholders advocated strongly for an increased incentive level for these types of projects. The Commonwealth should also explore the possibility of establishing a bulk purchasing program for HVAC equipment, including chillers and boilers, as a way to bring down prices for customers.

#### **B. SPECIFIC MEASURE-LEVEL COMMENTS**

Several stakeholders had specific comments on existing incentive programs. These technical recommendations are listed below:

- Incentives for LED applications for exterior and building lighting are not generous enough to drive adoption. The cost of the technology, while improving, does not yield the simple pay backs needed to incentivize a building owner to convert. Additionally, only lamps listed by Energy Star or Mass Save Interim LED Qualified list qualify under the Prescriptive Retrofit Program. It would be reasonable to accept “or equal” lamps allowing lamps that have the same energy ratings as a pre-approved lamp, but not currently listed as approved products under the Prescriptive Program.
- Although there is an argument whether new VFD’s are more efficient than 20+ year old units, replacement of older models by owners indicates proactive approach towards energy conservation by replacement before failure. This should be considered for the incentive programs.
- Broader and more robust Building Automation / DDC controls incentive programs are recommended. These energy savings strategies are perceived to be under-funded in the existing programs.

#### **IV. TRAINING AND BEHAVIORAL PROGRAMS RECOMMENDATIONS**

The final class of recommendations involved improved training programs and the development of commercial office behavioral pilots. The stakeholders recognized that these program types may not fit easily within the current structure of the regulated utility programs, but the sense of the group was that such initiatives have proven effective at reducing energy consumption and should be given consideration as pilots under the next three year plans. The stakeholders also felt that the current efficiency programs pay too little attention to plug loads, and that a commercial behavioral pilot may be an effective way to address this under-addressed source of commercial real estate energy consumption.

##### **A. TRAINING INCENTIVES FOR BUILDING OPERATIONS STAFF AND ENERGY COORDINATORS**

Building operations staffs are critical to the development of effective energy reduction strategies. An informed and knowledgeable operations staff is frequently the leading champions of efficiency projects in many organizations. Expanding training opportunities for these employees or participation in professional best practices sharing programs like ABC’s Challenge

for Sustainability would likely be a wise use of utility program funds that could significantly increase the savings potential at many commercial buildings in the Commonwealth.

#### B. BEHAVIOR PROGRAM PILOT FOR COMMERCIAL REAL ESTATE

Additionally, many of the tenant stakeholders in the group found that assigning dedicated staff within an organization to develop and implement behavior-based energy reduction strategies is an effective means of reducing utility bills. This strategy has proven effective both in ABC's Challenge for Sustainability as well as in the Environmental Defense Fund's summer sustainability associate program, among others. These in-the-workplace programs have the ability to directly address plug-loads, an area that has received limited attention under the existing PA programs. The cost effectiveness of these or similar programs could be evaluated as part of a dedicated pilot in the next three year plan.

#### V. CONCLUSION

The stakeholders engaged during the development of this testimony strongly support aggressive statewide energy efficiency goals and the funding levels needed to attain them. The recommendations expressed in this document are the preliminary thoughts of a group of the leading property owners and largest utility customers in the Commonwealth. It is our hope that the program improvements suggested in this testimony will help to guide and refine the PA programs during of the three-year planning process. We look forward to continued engagement with the EEAC and the individual PAs over the coming months and would be willing to meet with EEAC staff to review our recommendation in more detail and answer any questions. And, again, we thank the EEAC for the opportunity to provide testimony on this critically important issue.