

To: The Massachusetts Energy Efficiency Advisory Council (EEAC)
From: The **Boston Green Ribbon Commission Higher Education Working Group**
Re: Request for the EEAC 2019-2021 Plan Resolution and Plan

The Boston Green Ribbon Commission (GRC) is a group of business, institutional, and civic leaders in Boston working to develop shared strategies for addressing climate change in coordination with the City's Climate Action Plan. The GRC's membership constitutes many of the large C&I utility accounts within Eversource and National Grid territory. These comments are submitted on behalf of the Higher Education Working Group to align with our mission of research and teaching. These comments focus on the unique challenges of our sector and are submitted in addition to the feedback provided by the Green Ribbon Commission's Commercial Real Estate and Health Care Working Groups. Similar to the comments provided by the other Working Groups, the focus is to promote deep energy reductions and net zero buildings (ZEB). Here are the additional areas of focus that we would like to see included with Three-Year planning considerations for the C&I sector:

1. **Consider financial structures to enable deep energy retrofit** – Deep energy retrofit is a key strategy in order to achieve zero energy buildings. Consideration of a diversity of measures enables strategy synergy and the integrative process resulting in greater energy reductions. We feel special considerations should be applied to envelope upgrades. Current residential offering of insulation upgrades and weatherization should be expanded to C&I customers. Measures should be considered to be evaluated on a life cycle cost as opposed to simple payback metrics in order to take advantage of longer life measures and synergies with other building elements (i.e. reduction in HVAC system sizing). This requires review of payback considerations. Measures could be bundled in a way to offset long life measures. Our institutions have already pursued shorter payback measures and are seeking ways to achieve long term goals and pursuing longer payback measures.
2. **Continuous commissioning** – As low-hanging fruit is completed, and as better data and metrics are available, facilities teams are also focusing on optimizing building performance through continuous commissioning. More buildings have sophisticated building management systems and access to sophisticated software applications and products which help identify additional ways to optimize building performance in real time. Incentive programs should be aligned to promote these activities, and also to address the barriers of training staff to be able to use these tools.
3. **Offer programs for energy storage** – A clear, transparent framework should be considered outlining requirements for how to calculate demand savings and GHG emissions savings that energy storage provides and how these savings translate into an incentive structure. All storage technologies should be reviewed including thermal storage.
4. **Offer programs for microgrids** – Microgrids improve reliability, energy efficiency, and resilience. A clear, transparent framework should be considered outlining requirements for how to calculate both energy and non-energy benefits for microgrids as well as how these savings translate into an incentive structure particularly in tandem with combined heat and power (CHP).
5. **Offer programs for occupant engagement which result in actual energy reductions** – Occupant misuse of a building can have a significant impact on energy consumption. Higher education institutions have a unique challenge of working with a diverse set of user groups (students, faculty, staff, and visitors) as

well as diverse building uses. It's important that these individuals understand their role in the operation of the building based on its specific use. A combination of education, training, competitions, feedback mechanisms, and other occupant engagement/behavioral change strategies are critical to ensure proper operation. Implementation of such strategies will not only improve energy efficiency but occupant health in the indoor environment. A clear, transparent framework of how to effectively implement these strategies, how to quantify savings, and how these savings translate into an incentive structure should be considered.

6. **Consider financial structures that prioritize energy use measures which result in reduction of fossil fuels** – Burning fossil fuels contribute significantly to greenhouse gas emissions and negative human health impacts. Many institutions and municipalities have goals related to reducing greenhouse gas emissions and reliance on fossil fuels. The Green Communities Act considers both energy savings and emission reduction when valuing projects. Therefore, incentive structures should be considered to favor energy sources with lower environmental impact such as electricity from renewables over natural gas. This will move market development to improve focus on efficiency improvements in electric equipment, as well as electrification of heating and transportation. In turn, this will enable institutions, business, municipalities, and the state to achieve their efficiency and carbon reduction goals.
7. **Consider improvements to the Benefit-to-Cost Ratio Methodology and Incentive Delivery** – Clear, transparent guidance is critical to energy efficiency decision making. Development of documents like the “Energy Code Baseline Document” and “Simulation Guidelines” as part of the Mass Save Whole Building program have been helpful in this effort. However, more transparency regarding the Benefit-to-cost Ratio (BCR) methodology is required in order to better inform decision making. Furthermore, we feel the methodology needs to be improved to holistically evaluate measures on a life cycle cost as opposed to current simple payback metrics. Incentive delivery should also be improved to provide flexibility in submission process. In addition to allowing a project-based submission, provide the ability for an annual organization submission. This will enable the utility to reward organizations for their complete energy reduction impact particularly rewarding the multiple small projects which often don't benefit from utility incentive rebates. For many organizations, this can reduce resource costs and, in turn, increase the impact/recognized savings of the implemented measures.

We would be excited to collaborate and integrate our interdisciplinary knowledge to develop effective solutions. Please let us know how we can best work together. Thank you for your time and attention, and we look forward to continuing to engage with you on these matters.



CLEAN, GREEN POWER AT HARVARD UNIVERSITY, CAMBRIDGE. PHOTO BY COLIN DURRANT

HIGHER EDUCATION WORKING GROUP

The Higher Education Working Group represents the unique constituency of large research and residential campuses in Boston and neighboring cities.

Chair



Katherine Lapp
Executive Vice President
Harvard University

Colleges and universities have a significant footprint in the City, as well as a particular set of sustainability challenges, including large-scale energy procurement and management, and resiliency planning for diverse communities of tens of thousands of students, faculty, and staff.

The intellectual capacity of the higher education sector provides a source of expertise, motivation, and collaboration for the other members of the Green Ribbon Commission, City of Boston and its Climate Action Plan.

Participating Colleges and Universities:

Boston College

Emerson College

Massachusetts Institute of Technology

Tufts University

Boston University

Harvard University

Northeastern University

University of Massachusetts, Boston