



March 18, 2022

Commissioner Patrick Woodcock
Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

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Dear Commissioner Woodcock:

On behalf of A Better City’s membership representing 130 of Greater Boston’s business leaders across multiple sectors of the economy, thank you for the opportunity to comment on the Department of Energy Resources’ (DOER) Straw Proposal to update the Massachusetts Stretch Energy Code and develop the Municipal Opt-In Specialized Stretch Energy Code. We are grateful for the Commonwealth’s continued climate leadership and for your engagement with business leaders. We are committed to continuing to work with you to find implementable design and construction strategies that ensure that our next generation of buildings in Massachusetts aligns with the Commonwealth’s commitment to achieve net zero emissions by 2050.

We understand the need to update the existing Stretch Energy Code and, as required by the Climate Act of 2021, the development of the Municipal Opt-In Specialized Stretch Energy Code. In this process, we encourage you to consider the following recommendations to: 1) address grid reliability, capacity, resiliency, and affordability; 2) consider using source energy for building performance calculations; 3) share and consider updates to the Straw Proposal’s data modelling to account for COVID-19 impacts; 4) fill the Board of Building Regulations and Standards’ Commercial & Industrial expert seat vacancy; 5) prioritize equitable workforce development opportunities; and 6) reassess requirements in light of supply chain constraints. We also urge DOER to address member concerns and requests for clarity, including regarding the thresholds that would trigger renovation code compliance, thresholds for “high ventilation” buildings, and the overall alignment with existing municipal zoning requirements.

Over the past two years, A Better City has engaged member businesses and institutions from A Better City and the Boston Green Ribbon Commission’s Commercial Real Estate Working Group through an Efficient and Resilient Buildings Coalition to help drive science-based, aggressive, and achievable building policy development in Boston and across the Commonwealth. Based on discussions with A Better City staff, members, and feedback from Coalition members on DOER’s code briefing, please see the enclosed detailed comments and recommendations.

Sincerely,

Rick Dimino
President & CEO
A Better City

Enclosures: 1

cc: Maggie McCarey, Director of Energy Efficiency, DOER
Ian Finlayson, Deputy Director, Energy Efficiency Division, DOER
Paul Ormond, Efficiency Engineer, DOER

DETAILED COMMENTS ON THE DEPARTMENT OF ENERGY RESOURCES' (DOER) STRAW PROPOSAL FOR THE STRETCH ENERGY CODE UPDATE AND MUNICIPAL OPT-IN SPECIALIZED STRETCH ENERGY CODE.

A Better City and its members support the Commonwealth's goal of achieving net zero emissions by 2050, and we recognize the urgent and important role that the building sector, in particular new construction, plays in actualizing decarbonized buildings. We appreciate that as the Commonwealth seeks to implement building codes that align with this goal, DOER has selected consultants and sought stakeholder feedback on the Building Energy Code Straw Proposal (Straw Proposal). It is critical that input from the real estate community and large, efficient building technical experts be considered as you refine the proposed Straw Proposal. A Better City's Coalition members are eager to ensure that reasonable, science-based, consistent, and achievable standards are set so that building developers can plan for and comply with them once implemented. Below are a set of comments on DOER's Straw Proposal with associated recommendations, followed by a set of questions that members have requested additional clarity on. We look forward to continued engagement as you refine the recommendations for inclusion in the draft code language.

I. Overarching Elements for Additional Attention

A. Address Grid Reliability, Capacity, Resiliency, and Affordability Concerns.

Our members have expressed concern about the impact that the updated Stretch Energy Code and new Municipal Opt-In Specialized Stretch Energy Code could have on electrical grid reliability, capacity, resiliency, and affordability once adopted. As the Commonwealth decarbonizes the building sector (and considers the parallel decarbonization of the transportation sector), we recommend the Commonwealth couple this work with expanded efforts in clean energy reliability, clean energy resiliency, and clean grid capacity expansion as we promote electrification of buildings throughout the Commonwealth.

Additionally, given the grid's current reliability on natural gas (the ISO-NE March 2022 grid mix shows about 51% of our grid is powered by natural gas), we have concerns regarding the potential to increase emissions in the short-term while electrifying buildings. Members believe that in tandem with pursuing electrification in new construction, there needs to be a greater emphasis on reducing electricity generation emissions and cleaning up the grid. Promoting all-electric codes without also modernizing the grid puts the Commonwealth at risk of increasing emissions in the short-term, while also decreasing reliability and resiliency.

Members also have concerns regarding DOER's claim that the adoption of all-electric building codes will not increase peak demands and place further strain on the grid. Members suggest that DOER commission and publish a study on the true impacts of complete building electrification on power suppliers, electricity costs, load-management, and peak demand. Publicly available data will better prepare developers and utilities for an all-electric building sector future. This study should consider establishing a timeline for phasing in the Municipal Opt-In Stretch Energy Code and the Updated Stretch Energy Code based on grid improvements and the availability of renewable energy over time, to ensure that we minimize risk of grid failure.

Finally, we urge DOER to consider regional equity and a just transition throughout the design and implementation of the Straw Proposal. Our members are concerned about the affordability and impacts to all ratepayers, including those in low-income, environmental justice, and less resourced communities that may bear the burden of increasing energy costs as communities electrify.

Recommendation: A Better City recommends DOER commission and publish a study on the impact that the electrification of the building (and transportation) sector may have on grid reliability, capacity, resiliency, and affordability—and the steps that the state and utilities must take to keep up with increasing demands for an affordable and reliable clean energy supply within buildings.

B. Consider Using Source Energy for Building Performance Calculations.

While developing the new commercial code compliance pathway, Thermal Energy Demand Intensity (TEDI), our understanding is that DOER used site energy usage intensity (EUI) as the key metric for developing the pathway and informing data conclusions of subsequent grid impacts. Members have noted that source energy usage intensity would be a better indicator of total GHG emitted by a new building, as it measures both site energy as well as the energy from the generation process, including inefficiencies and the sizeable emission impacts from source energy generation. As we mentioned earlier, given that 51% of ISO-NE's grid mix is currently natural gas, members recommend that source energy be used as the building performance calculation until the electrical grid becomes cleaner.

When factoring in source generation emissions, the need for grid modernization becomes even clearer as the Commonwealth is still heavily reliant on natural gas, and the incorporation of distributed energy resources is in its infancy. Prioritization needs to be given to microgrids, and utility-scale storage and renewable energy development, which will all help to reduce EUI beyond building end-use, while also improving grid reliability and resiliency.

Recommendation: A Better City recommends DOER consider the use of source energy intensity for building performance calculations, and explore the opportunity for microgrids, and utility-scale storage and renewable energy in the finalized stretch code.

C. Share and Consider Updates to Straw Proposal Data Modeling to Account for COVID-19 Impacts.

From recent stakeholder sessions, we understand that the modeling to inform the Straw Proposal was performed prior to the COVID-19 pandemic. Members are concerned that the data does not account for factors like increased energy usage associated with upgraded HVAC and indoor air quality systems due to heightened health and safety concerns with the COVID-19 pandemic. To ensure that the DOER Straw Proposal does not harm the Commonwealth's economic viability and COVID-19 recovery efforts, we recommend updating the modeling used to inform the Straw Proposal, ensuring there is broad input from the building sector community, and reflecting the increased energy usage post pandemic.

Recommendation: A Better City recommends DOER publish the modeling that was used to inform the Straw Proposal and, if necessary, update the modeling to ensure economic viability under current COVID-19 recovery realities.

D. Fill the Board of Building Regulations and Standards' Commercial & Industrial Expert Seat Vacancy.

Members have expressed concern that there has not been sufficient collaboration and coordination between the Board of Building Regulations and Standards (BBRS) and DOER on the Base Building Code update, nor the Straw Proposal, as mandated by the Climate Act of 2021. Given the overlap in implementation timelines for code updates becoming effective in January 2023, it is concerning that the Baker Administration has still not filled the Commercial and Industrial expert seat within BBRS, which was statutorily mandated to be announced in summer 2021. A more collaborative process must be expedited, with filled seats at BBRS, to help inform the DOER Straw Proposal alignment.

Recommendation: To help inform DOER's Straw Proposal and to ensure alignment with updates to the Base Building Code, A Better City recommends that the Commonwealth immediately fill the vacant seat for a commercial and industrial building energy efficiency expert on the BBRS.

E. Prioritize Workforce Development Opportunities.

DOER has noted that significant workforce training and expansion will be needed to ensure effective implementation of the Straw Proposal. However, the complexity of both the updated Stretch Energy Code and Municipal Opt-In Stretch Energy Code has raised concerns to members who are focused on equitable workforce development opportunities. Teaching and explaining IECC, ASHRAE, HERS, Passive House, backstops, Prescriptive-Targeted-Relative Performance Pathways etc., which

are systems designed by professional architects and engineers for architects and engineers, are high bars to entry for a workforce that will be needed to ramp up quickly to meet demand. We therefore ask that as the draft codes are developed, that they be as simple to understand and implement as possible, so a workforce to meet new construction demands can grow as quickly as possible. We also suggest working across state agencies to help build an equitable workforce training tract specifically for efficient and decarbonized building code compliance.

Recommendation: A Better City requests DOER consider simplifying the Straw Proposal development to ensure a new and essential workforce can be trained to implement the updated and new stretch code requirements, and to design equitable workforce development opportunities that specifically help train historically disinvested communities.

F. Reassess Supply Chain and Market Preparedness.

In addition to workforce development constraints, another specific area of concern regarding market preparedness is in “embodied carbon requirements” of the Stretch Code. If DOER chooses to include embodied carbon requirements in the code, members have concerns about whether current low-carbon construction materials’ supply chain and associated markets in New England are sufficient to meet low embodied carbon materials’ demand. For example, there is limited availability of low-carbon concrete for current new construction projects in Massachusetts, let alone future demand.

Recommendation: A Better City recommends assessing the feasibility of including an embodied carbon requirement in the Straw Proposal and completing a supply chain and market analysis to inform the viability of all components of the proposed stretch energy codes.

II. Areas Requesting Additional Clarity

A. Alignment with Municipal Zoning Codes: Members are seeking additional clarity on how the Straw Proposal will relate to adjacent, developing municipal zoning codes.

As many members have buildings in Boston, they have requested clarity and details about alignment between the Straw Proposal and the City of Boston’s proposed Net Zero Carbon Zoning Standard. Alignment of the Straw Proposal with municipal policies like the Zero Net Carbon Zoning Standard will better prepare developers and municipal officials who work across jurisdictions in Massachusetts.

B. Retrofit Threshold: Members are seeking additional clarity on what retrofit threshold is triggered by each code.

Under the base, stretch, and specialized municipal opt-in codes, we would like to understand what the square footage trigger is for a “substantial renovation.”

C. High Ventilation Building Threshold: Members are seeking additional clarity on when a building is deemed “high ventilation,” and what “partial electrification is mandatory” means for such high ventilation buildings.

The Straw Proposal often uses the term “high ventilation” building to distinguish between different performance pathways and code requirements. While DOER has given general guidelines for what is deemed a high ventilation building (e.g., hospitals, labs), additional details that include a quantifiable threshold is requested by members. They have also requested clarification on the term “partial electrification is mandatory” for high ventilation buildings.

D. Role of Power Purchase Agreements (PPAs) in the Specialized Municipal Opt-in Code: Members are seeking additional details and clarity on on-site renewable generation and the role of PPAs in the Specialized Municipal Opt-in Code and how PPAs will be mandated/implemented.

DOER has stated that PPAs could play a role in the Specialized Municipal Opt-In Stretch Energy Code, as it relates to the “on-site renewable generation when feasible” requirement. Members request that the “when feasible” term be defined, and further detail provided on the potential role for PPAs in compliance.

E. Pre-Wiring for Future Electrification: Members are seeking additional clarity on the requirement for pre-wiring of the building as defined.

It is not clear how much of the building is required to be pre-wired for space heating under this proposal. The initial cost of this could be very significant and needs to be defined in order for developers to effectively plan for compliance.

F. Healthcare Building Types: Members are seeking clarity on how targets will be set for GHG reduction requirements in healthcare occupancies.

Healthcare occupancies have specific requirements that do not fall within any of the buildings that were analyzed in-depth by DOER. As healthcare building types were not specifically analyzed in-depth for inclusion in the Straw Proposal, there is concern that targets could be included in the Straw Proposal that are not achievable by a healthcare facility that is required to meet potentially conflicting federal and state codes.

Additionally, 12 Building types were analyzed in-depth to arrive at the total GHG emissions reduction referenced in the Straw Proposal, but the referenced analysis has not been made available for public review and comment. It is therefore not clear what inputs and assumptions were made to arrive at the GHG emissions reductions.

G. Ventilation Energy Recovery: Members are requesting a review of the equipment modelled to achieve the 80% effectiveness for heat recovery.

Many healthcare and laboratory buildings cannot achieve 80% effective heat recovery without the use of enthalpy wheels. Enthalpy wheels are not allowed in certain exhaust systems because of current standards. Run around heat recovery systems that can achieve this effectiveness may be proprietary. If 80% effectiveness for heat recovery is required in the code, it may unintentionally constitute a restraint of trade issue.

H. HVAC system size and distribution system reductions: Members are seeking clarity on what percentage of reduced HVAC cost was used for the Straw Proposal’s analysis to determine the incremental cost to build.

Healthcare buildings have requirements that may not allow a reduction in HVAC equipment size due to healthcare code mandates and Federal healthcare licensing requirements. Understanding the potential initial cost impacts for healthcare facilities should be considered and accommodated in the Straw Proposal.

III. Conclusion

We support the Commonwealth’s leadership on reducing emissions from the building sector in seeking the most cost-effective path towards building decarbonization. We are eager to continue engaging with DOER on the development of the Commonwealth’s Straw Proposal. Should you have any questions regarding these comments or the ongoing engagement of A Better City members, please reach out to Yve Torrie (ytorrie@abettercity.org). We appreciate the opportunity to partner with you to support this critical work.