

August 12, 2022

Ian Finlayson
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston MA 02114

Re: BUILDING CODE COMMENTS

Dear Mr. Finlayson:

The Town of Arlington is pleased to have the opportunity to submit these comments on the Department's update of the existing Stretch Energy Code and promulgation of the new municipal opt-in Specialized Stretch Energy Code.

Arlington is a leader in the municipal decarbonization movement. It was the second community in the Commonwealth to enact a clean heat (fossil-fuel free) bylaw/home rule petition, and it has been providing assistance to other municipalities who desire to follow the same path. In November 2021, then-Town Manager Adam Chapdelaine, joined by the mayors and town managers of 29 other towns and cities, sent a letter to Secretary Theoharides outlining their common hopes for the Specialized Stretch Energy Code. In March 2022, Mr. Chapdelaine submitted comments on the Department's "straw proposal" in which the mayors of Medford and Melrose and the town managers of Beverly, Holliston, Lexington, and Winchester joined.¹

In June 2022, Arlington's Town Meeting approved (by a vote of 170-8) a resolution proposed by the Town's Clean Energy Future Committee (CEFC) calling upon DOER to "promulgate a true net-zero opt-in building code that will allow towns that are willing to do so to pursue aggressive policies to control greenhouse gas emissions in the building sector in order to achieve net zero emissions by 2050 or before."² Town Meeting set forth several points that it believes should be included in the Specialized Stretch Energy Code, if not the updated Stretch Energy Code. This letter emphasizes five of these points:

- 1) Renovations,
- 2) Highly energy efficient buildings,
- 3) Electrification,
- 4) The requirement of all-electric or zero energy for large dwelling units, and
- 5) Embodied carbon.

It also addresses two other issues of concern to the Town: the proposed schedule for implementing the Specialized Stretch Energy Code and the achievability of the commercial code's thermal energy demand intensity (TEDI) requirements in the updated commercial Stretch Energy Code.

This letter's focus on these issues should not be interpreted as implying other issues raised by Town Meeting are no longer of concern. The comments in the resolution approved by Town Meeting continue to represent the Town's views.

¹ This letter is not present in the Department's published file of comments by municipalities; to ensure a complete record, a copy of the letter is Appendix A.

² A copy of that resolution is Appendix B.

Renovations

We are pleased that the Department has now included substantial renovations, alterations, and additions in the proposed update to the Stretch Code. This is especially important in Arlington, where a great deal of new construction activity takes the form of so-called “gut” renovations rather than wholly new construction. Often these renovations are practically the equivalent of new construction, however, and in such situations, Arlington believes that they should follow the rules applicable to new construction.

Highly Energy Efficient Buildings

Arlington supports the various provisions of the draft energy codes that stress high energy efficiency generally and the Passive House principles in particular. We are especially appreciative of the requirement in proposed RC 101.2 that “R-use buildings with total conditioned floor area greater than 12,000 square feet shall comply with provisions of Section R405 Passive House Building Certification Option and any of the pathways in RC 101.1.” The feasibility of Passive House construction in residential properties of this size is well established, and the use of Passive House Building Certification will both reduce carbon emissions and make electrification more economical.

Electrification

The updated Stretch Code should include a clear requirement of all-electric construction in new buildings and substantial renovations. When Arlington adopted its fossil-fuel-free bylaw in 2020, it was one of the few jurisdictions outside California to take such a step. Now such major cities as New York and Washington, DC, have adopted fossil-free legislation as well. Fossil-fuel-free construction is already economical; electrification is already prevalent in new multifamily housing, to the great benefit of people who live there; and failure to require buildings to install all-electric systems now will burden building owners with expensive future retrofits that will be required for the Commonwealth to meet its climate goals.

The Department’s current strategy in both the Stretch Energy Code and the Specialized Stretch Energy Code is to provide a strong incentive for builders to go all electric without actually requiring them to do so. This may prove effective eventually. Climate change, however, is an emergency now, and it is important to achieve results, not in the long term, but in the here and now. Today, outdated information and misinformation complicate the evaluation of comparative costs. Furthermore, builders may be reluctant to replace designs that have proven themselves in the marketplace or to incur the costs of developing new designs. Market factors like these unnecessarily retard progress in the absence of a requirement for all-electric systems.

If the Department is unwilling to require all-electric construction in the updated Stretch Code, it should at least allow municipalities that are willing to take the lead to require electrification (with reasonable but limited exceptions) through the Specialized Stretch Energy Code. An accelerated program of this kind will demonstrate the economic and market feasibility of all-electric construction and will help the Commonwealth develop the workforce and business and design models that will make the Department’s own chosen strategy more effective.

The Requirement of All-Electric or Zero Energy for Large Dwelling Units

Within the framework of the existing regulatory strategy, Arlington appreciates the addition of Section RC101.2 in the proposed Specialized Stretch Energy Code requiring dwelling units with more than 4,000

square feet of conditioned floor space to use either the Zero Energy or all-electric pathways. We believe this requirement will lead to all-electric construction, in most cases.

We urge the Department to consider reducing the threshold for large dwelling units from 4,000 to 3,000 square feet. This would substantially increase the proportion of new houses in our community to which that section would apply. New dwelling units in excess of 3,000 square feet cost well over \$1 million.³ All-electric construction for these homes is therefore highly unlikely to have an adverse effect on affordability. Surely such large houses, firmly situated in the luxury end of the market, should be leading the way in environmentally sound construction.

Embodied Carbon

The decision to exclude embodied carbon from any consideration in the proposed stretch energy codes is a mistake. We urge you to adopt the recommendation of the Net Zero Buildings Coalition that builders of buildings in excess of 100,000 square feet conduct a Whole Building Life Cycle Assessment (WBLCA) as prescribed by the International Living Future Institute (ILFI), even without establishing a whole building emissions threshold. Information from the required WBLCAs should be published and used to inform the Department's approach to embodied carbon in the next round of updates. We also endorse the Coalition's recommendation that the Department should maintain a list of low-carbon alternative materials appropriate for smaller buildings.

Addressing embodied carbon is urgent, since the harm it does occurs disproportionately in manufacturing and initial distribution processes and thus results in front-loaded emissions. Still, the concept of embodied carbon is relatively new and unfamiliar to much of the building community. The Coalition's recommendations would familiarize the industry with embodied carbon, how to evaluate it, and relatively low-cost ways of reducing greenhouse gas emissions related to it. Moreover, once the owners of large buildings do a WBLCA, some may act on it, even in the absence of a mandate, for commercial reasons or as a result of investor pressure. In addition, the information gathered by the assessment may provide the basis for tightening the regulations when they are next amended. Similarly, making a menu of relatively low-cost/high-return options available, even without mandating their use, could encourage some owners to use some of the alternatives, both providing up-front climate gains and generating data to inform future decisions.

Delay and the Opt-in Schedule

The opt-in schedule proposed for the Specialized Stretch Energy Code will unduly delay its implementation. The schedule envisions making that code available for opt-in before Saturday, December 24, 2022. The formal adoption of the code would become effective on the first January 1 or July 1 that is at least six months after the local government acts. It is unrealistic to imagine municipalities opting into the code in the week before the New Year. In practice, the proposed schedule would put off the effectiveness of the Specialized Stretch Energy Code until at least January 1, 2024. That is far longer than can be justified by concern for an orderly transition.

³ According to one realtor, based on MLS listings, in 2021 the average gross square footage of new single family houses in the \$1.5-2.0 million range was 3,336 square feet. MA Properties, 2021/2022 Market Review at p. 5. The average conditioned floor space would be lower than this and not far from 3,000 square feet.

It is possible that applying more stringent requirements to large houses will encourage the building of smaller houses. From an environmental point of view that would be a benefit.

The simplest solution would be to revise the opt-in schedule for the Specialized Stretch Energy Code to allow local governments to begin implementing the code six months after they opt in. This preserves a minimum six-month preparation period, while ensuring more expeditious phasing in of the code. Alternatively, the Department could consider a first-year only transition rule that would allow towns and cities that opt-in by (say) March 31, 2023, to begin implementing the code on October 1. Municipalities that fail to meet the March 31 deadline would be subject to the Department's currently proposed implementation schedule.

Implementation of the New TEDI Requirements

One innovation in the update of the commercial Stretch Energy Code is the use of Thermal Energy Demand Intensity (TEDI) to formulate goals for commercial buildings. Municipalities have a special interest in this approach, because TEDI is one of the two pathways applicable to schools, town halls, libraries, and other municipal buildings.

Arlington understands that comments on the straw proposal raised questions about whether the TEDI targets are realistically achievable. The Department has responded that "TEDI limits [are] subjected to 'stress testing,'" and that "modeling inputs [are] to be included in guidelines to be published this fall." We do not feel that the information that has been provided so far is sufficient to allow us to evaluate the application of the TEDI criteria in designing Town buildings. It is probable that the guidance document to be provided in the fall will be a great help in that regard, but unfortunately that document will not be released until the comment period on the draft code has expired. We urge the Department to reopen the record for additional comments on this issue after the envisioned modeling guidelines have been published. Among other things, a conversation about the implementation of TEDI at that time might facilitate orderly implementation of the updated Stretch Energy Code.

Conclusion

The Town of Arlington appreciates the difficult work that has gone into updating the Stretch Energy Code and writing the Specialized Stretch Energy Code. These codes will greatly improve the Commonwealth's regulation of carbon emissions in the building sector. Nevertheless, we believe that the codes can and should be significantly strengthened. The Specialized Stretch Energy Code should be used to allow willing municipalities to move forward more quickly, blazing the trail for other local governments and accelerating implementation of the changes needed fight climate change. Towns like Arlington are ready to lead the way, and we urge you to give us the tools we need to make a difference.

Respectfully submitted,



Sandy Pooler

Arlington Town Manager