

March 3, 2022

Department of Energy Resources (DOER)
100 Cambridge Street, Suite 1020
Boston, MA 02114
Attention: Nina Mascarenhas

Re: **Stretch Code Straw Proposal Hearing Testimony – Boston Metro** (submitted for written record)

My name is Ellen Watts. I am an **architect** of net zero and high-performance commercial and institutional buildings, **elected representative of the Boston Society for Architecture to AIA Massachusetts**, and a member of **DOER's Zero Net Energy Building Advisory Council**. **In the past, it's been my honor to serve as** elected president of **CREW Boston Commercial Real Estate Women** and co-chair of the **MA Governor's Zero Net Energy Buildings Task Force**.

Stretch codes have transformational power. Within a year of the first stretch code's roll-out in 2010, 140 communities sought designation or planning assistance toward becoming the first Green Communities. The first 35 designees or vanguard included Springfield, Worcester, Lowell, Salem, not just towns clustered around Boston. Contrary to common misconception, subsidized high performance energy efficiency disproportionately benefits not the wealthy but those who are most energy-burdened.

Once again, today, municipalities at every income level throughout the state are looking to DOER for transformational building energy stretch codes to meet state and local climate goals – and to drive both **carbon neutrality and equity**.

We have a 2030 goal. Let's meet it. DOER, your numbers tell us that the straw proposal will reduce building sector emissions by perhaps 10%, not 50%, by 2030. And that is only if the 16% drop in building sector emissions caused by pandemic, as shown by the MassDEP emission inventory, does not reverse.

To meet the goal, we need **a true net zero building energy code**. This will support the exceptional rate of development anticipated this decade while effectively leveling new building sector emissions, keeping our economy strong and workforce on the path to jobs of the future.

The stretch codes must include **major renovations** as well as new construction to help drive down existing building sector emissions as we retrofit 100,000 buildings a year to meet our goals.

There is substantial and growing support for a net zero code – both among architects and municipalities – as shown by letters of support for the climate bill. Officials from 59 communities representing 40% of the state's population supported it. So did 5,000 architects represent by AIA MA together with the three local chapters – BSA Boston Society for Architecture, AIA Central MA, and AIA Western MA.

As a practicing architect, I have designed large-scale net zero buildings – for public and private owners, for office and educational use. I am by no means alone. Massachusetts now has 6 million square feet of completed net zero buildings and 7+ million square feet in the net zero pipeline (in planning or under construction), many of them net zero schools -- proving the technical and financial feasibility and market demand for these buildings.

In 2019, the Boston Society for Architecture adopted net zero advocacy principles which jive with the Net Zero Stretch Code framework recently put forward by the Net Zero Buildings Coalition. Both platforms point to the same recommendation -- DOER should adopt a true **Net Zero Definition** such as common throughout the industry – *An energy-efficient, all-electric, low embodied carbon building that achieves carbon neutral building operations through production or procurement of renewable energy.* The straw proposal suggests that buildings will become net zero when the grid gets there in 2050. This is a very creative definition but will not meet our 2030 goals.

DOER should focus seven important new code provisions recommended by the framework, (more about these recommendations in a letter coming soon) – none of which are sufficiently addressed by the straw proposal:

- Energy efficiency
- Electrification
- Renewable energy
- Embodied carbon
- Building energy reporting and commissioning
- Refrigerants
- Exemptions and waivers

In conclusion, I want to underscore two of these provisions: embodied carbon and energy efficiency.

Reducing embodied carbon emissions from building materials and construction this decade is critical as these will exceed operational carbon emissions on a short-term basis. DOER should make this a requirement for all buildings (not just those with curtainwall) requiring Whole Building Life Cycle Assessment (modeling) and setting prescriptive specifications for high embodied carbon impact materials such as aluminum, steel, concrete, insulation, carpet, gypsum board.

DOER has a great idea to limit thermal energy demand intensity (TEDI). Yet this represents only a fraction of building energy demand. We also need to lower EUI targets – not just by 5% or 10% but by 30%, 40%, 50% or more, as has been shown to reduce life cycle costs. High performance buildings (such as at Passive House levels of performance) can help us transform the grid and adapt it for climate change. These buildings are by far the most thermally stable which can help utilities shed peak demand and shift delivery, saving utilities capital expense that would otherwise be required to build more total generation and peak capacity. This will translate into savings for ratepayers and reduce emissions from the energy sector as well.

Godspeed DOER. We are here to help.