



To: Massachusetts Department of Energy Resources (DOER)

From: Sierra Club

Date: March 18, 2022

Subject: **Stretch Building Code Straw Proposal Comments**

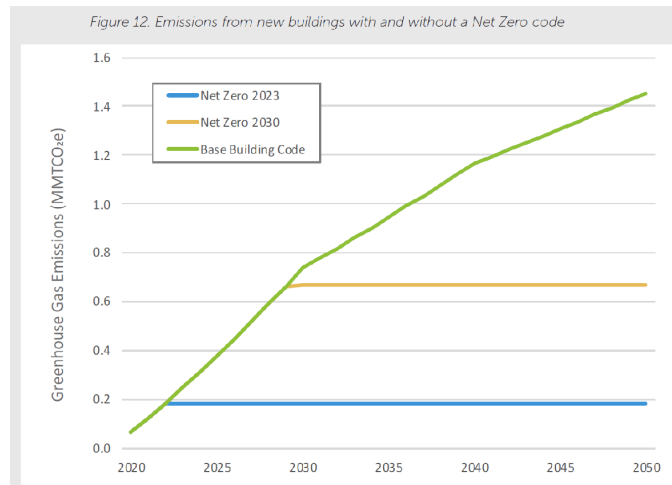
Thank you for the opportunity to comment on the straw proposal for the stretch and opt-in building energy codes. We offer comments on changes necessary for the Commonwealth to achieve its emissions reduction mandates in a way that addresses historical injustice and prevents overburdened ratepayers from bearing the cost as we decarbonize.

**Change the Definition of Net-Zero to Prevent Additional Emissions:** The definition of net-zero (slide 23 of the straw proposal) applies not to individual buildings but to the overall Massachusetts economy. This would cause a huge problem: Verifying that the buildings sector as a whole, let alone any specific building, reaches net zero depends on all the other sectors in the economy. This version of net zero would be very difficult to plan and enforce. An alternate approach, whereby each building can achieve true net zero, is required.

This can be done by defining a net zero building per the Massachusetts Net Zero Buildings Coalition's (MA NZ BC) definition: an energy-efficient, all-electric, low embodied carbon building that achieves carbon neutral operations through the production and/or procurement of renewable energy.

The straw proposal's net zero definition says that "Net-zero new construction is compatible, as-built [emphasis added], with the Commonwealth's net zero emissions economy in 2050." This relies on the pre-wiring of the building for all-electric operation, some day. It ignores the fossil-fueled equipment that it would allow to be installed in the building when it is built.

The definition slide goes on to say that the definition is "consistent with electrification and deep efficiency approach in EEA's 2050 Roadmap." Figure 12 below from the 2050 Roadmap (page 54) shows the effect of a true net zero building code: Emissions stop rising when the code goes into effect. This will not happen with a code that allows fossil fueled buildings. The net zero code must not allow fossil fuels except in very limited circumstances where all-electric operation would be entirely infeasible.



The definition slide continues: “A building becomes net zero energy when MA electric grid is net zero”. This statement is true only if and when fossil-fueled heating and appliances are replaced with electric ones. The straw proposal doesn’t say when buildings must cease burning fossil fuels and convert to all-electric operation. On the other hand, we can build net-zero buildings today by applying the MA NZ BC definition, above.

**Center Low-Income And Utility-Burdened Residents:** As the state accelerates a clean energy transition, we cannot afford to leave out utility burdened residents who live in frontline and environmental justice communities. By continuing to use the straw proposal’s definition of net zero, the state will certainly saddle low-income residents with the high costs of heating poorly constructed homes with fossil fuels. Energy-burdened communities will benefit most from energy-efficient affordable housing and declining emissions. To ensure they do, options for continued fossil fuel must be struck from net zero’s definition. Simultaneously, local and state policies must work in coordination with a net zero stretch code to expand workforce training and incentivize heat pump retrofits for low- and moderate-income ratepayers.

**Include Renovations:** The straw proposal mentions only new construction, not renovations. Given that over 70% of the 2050 building stock already exists, major renovations should also be covered by the stretch and opt-in codes.

**Require All Buildings To Be Powered With Renewable Energy.** Requiring some buildings (those in sunny locations) but not others (those in shady locations) to install rooftop solar PV will yield uneven and unfair results. Instead of providing easily circumventable requirements, it would be fairer, and allow more options, to require all buildings to be fully powered with renewable energy, either produced on-site or purchased. Many sites have parking or other areas that are suitable for PV, which should be used in addition to rooftop PV.

**Include Roof Design:** On-site PV must be considered more deeply than simply requiring it where feasible in sunny locations. There should be guidelines that a certain percentage of contiguous roof area face south with a favorable elevation, and not angles, dormers or obstacles that prevent installation of solar.

**Expand Consideration of Embodied Carbon:** It’s good to see embodied carbon addressed, in the context of curtain walls. However, the code should apply the concept of embodied carbon more broadly, and for commercial and residential construction.

**Ensure We Meet Our 2050 Targets:** To increase confidence in the code and demonstrate compliance with the code's intent, DOER should provide modeling to show how the next draft will meet the building emissions targets identified by the Clean Energy and Climate Plan and laid out in the Next Generation Roadmap Law. This could include estimates of when fossil fueled equipment will be retired and replaced with electric, the assumed date of when the grid will reach net zero, assumed adoption rates of the opt-in code, and anticipated phase-in of future revisions.

**Include the Social Cost of Carbon:** The proposal doesn't mention the social cost of carbon, which would affect comparative costs of electric vs fossil fueled buildings. We encourage the DOER to do so. Synapse Energy Economics developed a social cost of carbon for MassSave, and the White House Interagency Working Group has another.

Thank you for your consideration of these important issues. For any questions related to our comments or to discuss further, please contact us.

Respectfully,

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