

Letter in Support of DOER Code

This letter strongly supports the code language as originally written and rejects the campaign initiated by The Massachusetts Climatic Action Network to require that the Specialized Code be changed to require that all future construction be all-electric. I am responding to you as a member of Chatham CAN, chair of the Chatham Energy and Climate Action Committee, an energy professional with 40 plus years designing and evaluating renewable and energy efficiency programs, and an evaluation consultant overseeing several statewide energy efficiency programs, including MassSave.. I am committed to the same goals of eliminating fossil fuels as MCAN, however, we do now disagree on how that gets accomplished

Over the past forty years I have been witness to the promotion of ideas that reach bandwagon proportions (nuclear power, solar in the late 70's, and earlier addition of heat pumps are good examples) where well intended advocates embrace unproven technologies well before they are ready. I have been part of numerous studies in Massachusetts and elsewhere on heat pumps. I am a believer in their future, and recently installed a unit in my home. The fact is that there are many things we still do not know about, most particularly how they perform at extreme temperatures. While we do have more studies documenting their use in homes, we do not actually have real in-field data on their performance. Studies like the recently released E4 study show that energy input into the units at what turned out to be a mild winter. What they do not tell us is how much heat output is obtained. When people claim that heat pumps are proven technology, they do so using performance values provided by manufacturers. Before we jump on the bandwagon and force every new home and business to install heat pumps, we need to get field studies of performance. The one early study that did measure performance was done by Cadmus under my supervision. That study found major decreases in performance at very cold temperatures. It also found significant variation in performance. For example, units do not perform at the expected output when two-feet of snow is covering the outside unit. Nor do we have data to say how performance varies when unit charge is not at optimal level. The MA, CT, and RI efficiency programs are undertaking a metering study that should give us a better idea of performance. We also need more research and training on other aspects of heat pumps including installation practices and sizing protocols that will help us design installation and maintenance practices that will better ensure that heat pumps will work as intended. My hope is that five years from now, we will know how to install and operate them and only then should we decide if we make them mandatory in new construction.

Furthermore, while we need to achieve a fossil-free future, it is not clear that we gain much in forcing all new homes and businesses to go all-electric now. The truth is that the given our current electric grid, the all-electric home will use a similar amount of natural gas though it is burned at the power station. Shifting the burden for peaking power supply from the home to the grid will have serious consequences that the grid is not ready to handle. In the future, when we have converted our power grid to clean electricity, and we've built the necessary energy storage; homes built under the NET-Zero Ready optional code, will have all the wiring in place to make the conversion.

What is really frustrating to me is that MCAN is fixated on all-electric now and is missing the real power and benefits of the proposed code. The new stretch code is significantly better than the current stretch code. It will require that new buildings achieve levels of efficiency well above current practice. Building codes are usually used to require the least efficient builders to increase efficiency. Codes generally do

not pass that are aggressive because of opposition from the building industry. It is with that thought in mind that I am most opposed to the MCAN suggested changes to the specialized code. DOER does not enact the building code. Each town has the responsibility for passing the code at town meeting and then enforcing the code. In order to get the new Net-Zero-Ready codes passed, each town will need 67% of town meeting attendees to vote yes. It is also possible for towns to vote to reject the stretch code and revert back to the base code. That would be a disaster.

In Chatham, I think we have a good shot to get Net-Zero-ready approval. I do not think we have any chance of getting an all electric-only code passed. There will be some voters who may sympathize with climate action, but are not ready to give up their gas fireplaces. While we have made significant gains in induction cooking, there are those whetted to cooking with gas. Nor are there good induction units that would fit into affordable housing budgets.

I spoke briefly this week at the Cape Cod CAN meeting and the Energy Committees of Cape Cod meeting trying to get everyone to embrace the new code and work collectively to get our communities to support the Stretch Code and hopefully the Specialized Net-Zero Ready code alternative. Even on my committee, there were members who would not be ready to pass a mandatory Net-Zero all electric code.

Because the Specialized Code as it was written is passable, it will have the greatest effect on meeting our current and future climate goals. I applaud DOER for taking this aggressive action. The energy efficiency requirements of this code are an important step that is not worth risking by reaching too far too quickly for all-electric construction.

Sincerely,

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