

Finlayson, Ian (ENE)

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July 30, 2022

Hi and thanks for receiving public comments on the Commonwealth's Department of Energy Resources proposed net zero energy building code provisions.

I organize a local citizen's group called Sustainable Northborough. In June we held a public presentation by a town resident who has a "carbon neutral home" where they installed a geothermal electric heat pump/AC, drive electric vehicles, and harness electricity from rooftop solar. The upfront costs of this home's retrofits have already paid back the investment, and they will have minimal fuel or electric costs for the decade(s) to come.

The DOER's current draft "opt-in next zero stretch" energy building code permits polluting furnaces instead of requiring best available building technologies. It only requires new buildings to be wired for a future installation of solar and electric high-efficiency heat/cooling systems. This defeats the intent of the 2021 Next Generation climate law to achieve rapid and sustained carbon emissions reduction. The DOER's green-lighting of conventional equipment enshrines burning of petroleum and methane/propane, a heat-wasting future. We can and must do so much more than that.

We know that maximal insulation, on-roof solar or dedicated off-site solar/wind generation, and geothermal HVAC costs only 4% in a new construction relative to conventional building systems. This investment gets paid back quickly and then is cash-flow positive.

The less stringent the building code, the more developers profit by minimizing their upfront cost, as they typically bear no operational cost responsibility. Modest building footprints should be strongly incentivized, and over a minimum square footage per resident/employee should be taxed. No residence need be 4,000 square feet. We raised two kids in a 1,750 square foot home, and now have excess space, with three rooms mostly unused. While large homes are highly profitable to erect and sell, the buyer is locked into heat now at \$5 per gallon fuel, and cool at

\$0.25 to 0.30 per kilowatt hour. Such construction is committed to decades of unabated carbon emissions, before the opportunity to replace water heater, furnace, AC units, generator, roof shingles, and to remodel with air handling ductwork, drilled wells, solar electric, battery storage. So much cost and pollution can be avoided up front.

Our region of Central MA has a dead commercial space problem. The July 22 public hearing was held in a beautifully constructed LEED certified building, currently empty of employees. Despite a ubiquitous commercial space glut, building pressure favors development of intact forests and fields, likely less expensive than the cost of derelict property redevelopment.

To meet net zero statewide goals, it is imperative to keep and expand natural resources of trees and soil that absorb ever-scarcer summer rain, evaporatively cool the vicinity, and are the only available technology to drawdown and store atmospheric carbon.

Residences and the Fales public school in our Boros demonstrate the practicality, cost-feasibility, and long-term projected savings of building (and to a lesser degree of retrofitting) to achieve net zero or energy-positive performance. These projects yield multiplicative returns on investment that benefit the building owner and occupants.

The intent of an optional building energy code is to give the municipality the decision to adopt higher stringency building standards. We citizens want this, and we see a few wires that connect to nothing achieves nothing.

Low income communities will pay the brunt of stranded fossil fuel pipeline 50-year loans. All people deserve to benefit from more life-sustaining practices that ensure we meet 2030 state emissions goals. Those least able to afford spiking energy prices, who lack assets to invest in solar, EVs, and high efficiency equipment, need affordability and access.

Public policy and regulation must accord with the scale of the climate emergency. Finalize a code that is maximally efficient, practicable, and well-considered to avoid unintended consequences and inequitable burdens of pollution, heat wave burden, and energy cost.

Don't leave the loan for pipelines and the compounding interest of catastrophic leakage to be paid by low-income families, renters, and unaware buyers of new homes. Don't leave our kids the bill for failed decision making.

We can't afford for anyone anywhere to be granted a pass to emit more carbon into the atmosphere. As we adopt deep energy efficiency, geothermal building operation, and high mileage electric vehicles, we might just restore a habitable planet and afford measures that continually increase sustainability.

Thank you for boldly facing the future with a defensible definition of net zero that aligns with state carbon emissions reduction requirements.

Yours in hope,

