



Via Electronic Mail

January 5, 2021

His Excellency Charles D. Baker Jr.
Governor of the Commonwealth of Massachusetts
State House, Room 360
Boston, Massachusetts 02133

Re: HBRAMA Request for Veto of S. 2995, *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy*

Dear Governor Baker:

On behalf of the 1,600 member companies of the Home Builders and Remodelers Association of Massachusetts (HBRAMA), I wish to convey to you our strong opposition to several sections of *S. 2995, An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy*, as we believe they will exacerbate the current housing crisis in the Commonwealth. These legislative amendments will unquestionably have the effect of increasing the cost of developing and building new housing. With Massachusetts families already facing some of the highest costs in the nation to purchase a home or rent an apartment, such a result is unconscionable, notwithstanding the laudable goals of the bill.

The sections S. 2995 of concern to the HBRAMA include:

- SECTIONS 9, 10. Mandates unworkable emissions sub-limits for six high priority sectors of the economy, including commercial and industrial heating and cooling, residential heating and cooling, industrial processes and transportation;
- SECTION 31. Directs the Department of Energy Resources to execute the development of a municipal opt-in "net zero stretch energy code" and definition of "net zero building" within one year, taking this process away from the Board of Building Regulations and Standards (BIRS), and therefore distancing important rulemaking from the trusted and recognized construction and building expertise of the BIRS;
- SECTIONS 36 – 53 Mandates stringent new appliance and plumbing efficiency standards, including residential appliances and plumbing fixtures that strain against both affordability and market availability;

- SECTIONS 55 – 60 Codifies environmental justice procedures for real estate development in an administratively burdensome and costly way that will delay residential and mixed-use projects requiring a state permit;
- SECTIONS 64 – 67 Expands the membership of the BBRS for the purpose of diluting the influence of the building contractors, design professionals, municipal building officials, and the building trades; and
- SECTION 68. Establishes term limits on the members of the BBRS, including the representative of the HBRAMA, and therefore further diluting the reasoned voice of building professionals and municipal officials.

“Net zero stretch energy code”

Of all the Sections of S. 2995 cited above, the mandate for the development of a “net zero stretch energy code” is the most impactful relative to the affordability and feasibility of new housing construction in Massachusetts, particularly single-family home construction. Whatever the speculative positive benefits of such a code on greenhouse gas emissions in the Commonwealth, the cost burden upon future homebuyers will be great.

Given the rapidly rising cost of lumber and other materials that are used to construct a new home, as well as escalating labor costs due to the scarcity of skilled tradespersons, the incremental additional expense of complying with a yet-to-be-defined “net zero stretch energy code” will surely exacerbate the growing housing affordability gap confronting most of the state’s residents. The substantial added upfront cost to a new home might well prove to be an economic barrier to homeownership for many, and the additional costs imposed on workforce rental projects, risk rendering uneconomical already marginal workforce rental projects in many ex-urban communities.

The HBRAMA supports and encourages its members to build *Energy Star Homes*. And although many prospective homebuyers do choose such homes, surveys have found that 70% of all homebuyers nationwide turn down energy upgrades when offered by homebuilders. The reason they do so is simple – the upfront cost is too great and the cost savings too small to justify the added expense.

Ekotope Report

In an effort to quantify the added costs to homebuyers of ever increasing energy code requirements in Massachusetts, the HBRAMA in 2012 retained the energy-consulting firm of Ekotope Inc. Ekotope is a Cambridge, Massachusetts based company that offers software solutions for designing energy-efficient buildings to maximize owners’ investments as well as ensuring energy code compliance. Founded in 2010, the inspiration for Ekotope’s optimization engine grew out of MIT Aeronautics and Astronautics Professor Edward F. Crawley’s quest for a way to find the most energy efficient design for a home he was building in 2009. Crawley found there was no way for his architect to easily analyze component tradeoffs to find the best energy and investment combination. A rocket scientist, Professor Crawley, drew upon NASA technology and assembled a select group of industry experts to come up with the Ekotope solution.

In preparing its study of the incremental costs of building energy codes, Ekotope calculated final homebuyer cost estimates using a typical 1,924 square foot single-family house designed to meet five recent and proposed Massachusetts energy codes: 6th Edition, 8th Edition, 2009 Stretch Energy Code, IECC 2012 and an “enhanced” or “updated” Stretch Energy Code being proposed at the time. Component cost estimates were made by Stephen Dixon, a custom homebuilder in Southeastern Massachusetts and former member of the Board of Building Regulations and Standards. The components included insulation,

windows, lumber, heating and cooling equipment, as well as labor required. Mr. Dixon estimated these costs based upon his more than 30 years in the home building business and quotes from subcontractors.

Ekotrope software was used to determine the most cost effective design to meet the performance-based Stretch Energy Code, an “enhanced” Stretch Energy Code, and the IECC 2012. The software runs energy and cost simulations on all possible design configurations that can be built with a set of available energy components. It then chooses the least expensive configurations that meet the required energy code. These designs were verified using REM/Rate, another energy modeling software used by MA HERS Raters.

Based upon their analysis, the total added cost to consumers of relevant codes when compared with the 6th Edition of the State Building Code were as follows:

Energy Code Version	Additional Cost to Consumer
6 th Edition Base Code	\$0.00
8 th Edition Base Code	\$4,992.00
8 th Edition Stretch Energy Code	\$6,485.00
IECC 2012	\$16,049.00
Proposed “Enhanced” Stretch Energy Code	\$17,426.00

Ekotrope also examined the energy and capital costs of each code compliant design compared using the 6th Edition as a baseline. Those potential energy savings and additional capital costs to consumers were as follows:

	Annual Energy Savings Over 6 th Edition	Additional Capital Cost to Consumer
8 th Edition HERS Performance	\$181.00	\$4,992.00
Stretch Energy Code	\$334.00	\$6,485.00
IECC 2012 Prescriptive	\$603.00	\$16,049.00
Enhanced Stretch Energy Code	\$696.00	\$17,426.00

As is evident by these findings, ever more stringent energy building codes come at a very high price for homebuyers. And, importantly, the annual savings in energy costs for those same homebuyers is relatively low, requiring many years to recapture the additional upfront cost of purchasing a new home. Requiring a homebuyer to wait 10 years or more before he or she begins to achieve a net savings is too much to ask, especially since surveys have shown that most homes change ownership more frequently than that.

New Jersey Study

If a so-called “enhanced” Stretch Energy Code would have added more than \$17,000 to the cost of a typical newly constructed single-family home in 2012, the added cost to a homebuyer in 2021 of a “net zero stretch energy code” would assuredly be much, much greater. In this regard, we can look to a study undertaken by the New Jersey Builders Association (NJBA) regarding the impact of that state’s governor’s Energy Master Plan on new single-family home construction.

On January 27, 2020, New Jersey Gov. Phil Murphy unveiled an Energy Master Plan, which outlined key strategies to reach his administration’s goal of 100 percent clean energy by 2050. The governor’s executive order directed New Jersey’s Department of Environmental Protection to make sweeping regulatory reforms to reduce emissions and adapt to climate change. Among the strategies set forth in that order was reducing energy consumption and emissions from the building sector through decarbonization and electrification of new and existing buildings, including the expansion of statewide net zero carbon homes incentive programs, the development of EV-ready and Demand Response-ready building codes.

In response to the governor's plan, the NJBA undertook a study to determine what the added cost would be to construct a typical 2,400 sq. ft. two-story home built on slab that would be net zero energy. According to the U.S. Department of Energy, a zero energy building is one that produces enough renewable energy to meet its own annual energy consumption requirements, thereby reducing the use of nonrenewable energy in the building sector.

After accounting for the use of high efficiency appliances and LED lighting, converting cooking to electric, replacing natural gas furnace with an air-source heat pump and smart thermostat, replacing hot water heater with heat pump, increasing wall, roof and slab insulation, wrapping house to reduce air leakage by half, utilizing double-pane argon filled windows with low emissive glass coating, installing PV Generation with Batteries, and increasing the electric infrastructure to the home, the NJBA found the total added cost, excluding electric vehicle (EV) charging, to construct a typical single-family home was more than \$85,000. When EV charging was included, the cost soared to more than \$126,000. That a "net zero stretch energy code" could potentially impose such costs on a young family of average means dreaming of purchasing their first home in Massachusetts is both environmentally unjustified and economically indefensible.

The Home Builders and Remodelers Association of Massachusetts is grateful to you and your administration for its steadfast commitment to expanding housing opportunities for all the citizens of the Commonwealth. In our view, many of the provisions of S. 2995 are in direct contradiction to that goal and the state's dire need for new housing production. It is for these reasons, among others, that we strongly implore you to veto S. 2995.

Thank you for your consideration of our views. Please do not hesitate to contact me if you have any questions.

Respectfully,



Matthew Anderson
President

C: Lt. Gov. Karyn E. Polito
Secretary Michael Kennealy, Executive Office of Housing and Economic Development
Secretary Kathleen Theoharides, Executive Office of Housing and Economic Development