

## **ENERGY EFFICIENCY AND SUSTAINABLE ENERGY BOARD**

RSA 125-O:5-a  
21 South Fruit Street, Suite 10  
Concord, N.H. 03301-2429

Adopted April 20, 2018

### Policy Statement to the Building Code Review Board on Current Energy Codes for Building Construction

The New Hampshire Energy Efficiency & Sustainable Energy Board (EESE Board) supports the adoption and implementation of modern energy codes and standards for building construction in our state. The EESE Board has long recognized that energy efficiency and conservation are the least-cost energy resources available to our state. The EESE Board was created by the legislature “to promote and coordinate energy efficiency, demand response, and sustainable energy programs in New Hampshire.”<sup>1</sup> Its members include representatives of state agencies, consumers, the Legislature, nonprofit groups, and private industry.

The EESE Board recognizes that buildings are long-term assets and that each building constructed today could affect energy consumption for the next 50 to 100 years.<sup>2</sup> The EESE Board further recognizes that incorporating energy efficiency measures at the time of construction is one of the most cost-effective strategies for reducing fuel and utility costs otherwise borne by the consumer.<sup>3</sup>

The International Energy Conservation Code (IECC) is a vital strategy for reducing energy use, thereby reducing direct costs to consumers for their fuel and utility purchases. By taking advantage of recent technological advances - through adoption of modern building construction standards and code compliance strategies - New Hampshire consumers can benefit from opportunities to reduce the total cost associated with building ownership by reducing building energy consumption costs over the lifetime of their homes and businesses. Further, as the 2014 New Hampshire Ten-Year Energy Strategy recognized, the cost savings of building energy code update and compliance efforts will help consumers keep more of their dollars in our local economy.<sup>4</sup>

A building energy-use model, developed for the U.S. Department of Energy, projected that residential buildings in New Hampshire would experience a 20.8 percent reduction in energy consumption if built to the 2015 edition when compared to the 2009 edition of the IECC, the current NH building-energy code. This reduced energy consumption equates to an average annual avoided-energy cost of \$542 across single and multi-family homes in the southern tier of the state, and an average annual avoided-energy cost of \$693 in the northern tier. Over the life of a 30-year mortgage, homeowners were projected to realize \$8,575 in avoided-energy costs in southern New Hampshire and \$10,258 in the North.<sup>5</sup> Adoption of modern energy codes and standards will not only provide cost savings for heating, cooling, and lighting for homeowners, but it will help keep New Hampshire economically competitive.

The EESE Board strongly encourages the Building Code Review Board and the Legislature to recognize the value provided by improvements and updates to the International Energy Conservation Code as they consider updating the definition of the NH Building Codes in RSA 155-A. The EESE Board also recommends that modern codes be adopted in a comprehensive way that recognizes the direct savings in energy bills to the consumer.

The EESE Board remains ready to assist in the discussion and provide its input to the Legislature and the Building Code Review Board for the development of meaningful and modern energy improvement codes.

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<sup>1</sup> RSA 125-O:5-a Energy Efficiency and Sustainable Energy Board, available at: <http://www.gencourt.state.nh.us/rsa/html/X/125-O/125-O-5-a.htm>.

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<sup>2</sup> US Department of Energy. Quadrennial Technology Review 2015. Supplemental Information. (2015) Page 19. Available at: <https://energy.gov/sites/prod/files/2016/10/f33/Ch1-SI-Additional-Information-on-Energy-Challenges.pdf>

<sup>3</sup> The Edison Foundation. Utilities and Building Energy Codes: Air Quality and Energy Savings Opportunities. (Describing the cost of energy codes and standards as 1.1 cents/kWh, or 1/3 the cost of the average residential program) Available at: [http://www.imt.org/uploads/resources/files/IEE-IMT-UtilitiesAndBuildingEnergyCodes\\_FactSheet.pdf](http://www.imt.org/uploads/resources/files/IEE-IMT-UtilitiesAndBuildingEnergyCodes_FactSheet.pdf)

<sup>4</sup> New Hampshire Office of Energy and Planning. New Hampshire Ten Year State Energy Strategy. (2014) Page 31-35. Available at: <https://www.nh.gov/osi/energy/programs/documents/energy-strategy.pdf>

<sup>5</sup> The average percent energy reduction, the avoided-energy costs, and 30-yr life-cycle avoided-energy costs were calculated for the EESE Board using more recent state energy cost data and revised tax rate assumptions. The revised projections were calculated using the US DOE's State Savings Calculator available on the US DOE Building Energy Codes Program's Residential Energy & Cost Savings Analysis webpage: <https://www.energycodes.gov/residential-energy-cost-savings-analysis>. Version 163 of the Excel based calculator was used.

This calculator provides a means to tailor state-level energy code cost-effectiveness analysis. While the tool mimics the DOE methodology used by the Pacific Northwest National Laboratory (PNNL) to complete official state analysis reports, the calculator allows the customization of economic assumptions and other parameters. These include parameters such as local cost adjustments, energy prices and escalation rates, inflation and taxes, loan terms, and the overall study period used for the analysis. The calculator generates reports that summarize results in a format similar to the PNNL state reports.

For the EESE Board, only the per unit energy costs, the marginal income tax, and the property tax rate were revised to develop the values for the annual avoided-energy costs and the 30-yr life-cycle cost. The property tax assumption was revised from 1.1 percent to 2 percent and the marginal income tax was revised from 5 percent to 0 percent. The revised per unit energy costs of \$2.96/gallon of heating oil, \$1.28/therm of natural gas, and \$0.18/kWh were obtained from the New Hampshire Office of Strategic Initiatives "Fuel Prices" website: <http://www.nh.gov/oepp/energy/energy-nh/fuel-prices/index.htm> on March 12, 2018. A digital summary of the calculator's output is available on the EESE Board webpage: <https://www.puc.nh.gov/EESE.htm>.

The original US Department of Energy and Pacific Northwest National Laboratory's report Cost-Effectiveness Analysis of the Residential Provisions of the 2015 IECC for New Hampshire (2016), is available at: [https://www.pnnl.gov/main/publications/external/technical\\_reports/PNNL-24937Rev1.pdf](https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-24937Rev1.pdf).