October 14, 2020

Re: Nashville and Davidson County’s Residential and Commercial Energy Conservation Codes

Dear Metropolitan Council of Nashville and Davidson County,

Thank you for the opportunity to comment on proposed ordinance BL2020-458 introduced by Council Members Colby Sledge, Tom Cash, and Brett Withers, which would update the residential and commercial building codes for Nashville and Davidson County. As part of the proposed ordinance, PIMA supports adopting the residential and commercial provisions of the 2018 International Energy Conservation Code (IECC) and we urge the Council to resist amendments to the energy code that are not in the best interests of energy consumers or that undermine the City's broader energy and environmental policy objectives.

Adopting an updated energy code is the most important and cost-effective policy cities have for addressing the negative economic and environmental impacts caused by building energy waste—a sector that is responsible for 40% of U.S. energy use. Updated building energy codes will help the Nashville Metro region to cost-effectively achieve a range of benefits, including:

- Reduced air pollution and climate change impacts;
- Consumer and business cost savings;
- Increased flexibility and reliability of our energy system and grid;
- Reduced peak energy demand;
- Improved energy productivity and a stronger economy; and
- Reduced potential for indoor air quality problems and improved occupant comfort.

The Pacific Northwest National Laboratory (PNNL) reviews every new version of the model energy codes for energy savings and cost-effectiveness. There have been three new versions...

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1 For cities, this contribution can be as high as 60%.
released since Nashville or the State of Tennessee last updated its energy code.\(^2\) For all these updates, PNNL has determined that the new versions are extremely cost-effective and result in relatively significant life-cycle cost savings. For situations where the home or building purchase is financed, which is the most common scenario, this level of cost-effectiveness would result in a positive net cash flow for home or building owners starting within a year or two of the purchase date.\(^3\) Adoption of the 2018 IECC, without weakening amendments, would impact the cost of construction by less than 1%, but energy use in new buildings would be reduced by 23.2% for residential buildings and 21.4% for commercial buildings.\(^4\)

Also, an updated energy code ensures that future commercial and residential development does not come at the expense of Nashville’s environmental and energy goals. Without this update, future development and construction in the metro area will “lock in” decades of wasted energy and pollution.

**PNNL Cost-Effectiveness Memo/Analysis for Nashville Dated 05/01/2020**

We believe that the May 1, 2020 PNNL Memorandum to Nashville calculating the cost-effectiveness of the new residential insulation requirements is misleading and would benefit from additional information or background. The PNNL Memo states that the $1,797 used for its estimate of first costs is the mid-point between the two estimates of $1,015 and $2,500. The low estimate ($1,015) is based on a widely accepted data source, RS Means Residential Cost Data. For the high estimate (which PNNL describes as the highest they have “seen”), it is not known what the material costs are based on, but we do know that it assumes stud spacing of 16” instead of 24”. As a result, this range is skewed or inflated with higher costs and results in a misleading estimate. The more reasonable approach would have been simply to use the estimate based on the RS Means data, which due to the nature of RS Means data, is still very conservative. This estimate would assume stud spacing of 24” instead of 16”, which is typical for 2 x 6 residential wall constructions. Wood-framed walls using 2 x 4 studs typically space those studs 16” apart. Using a first-cost estimate of $1,015 instead of $1,797 significantly improves the cost-effectiveness of the increased wall and ceiling insulation levels under the 2018 IECC.

\(^2\) Tennessee recently adopt a new version of its residential energy code, but amended it by keeping the older, weaker requirements from the 2009 IECC for the thermal envelope and air and duct leakage. Also, the State still has not updated its commercial building energy code from the 2009 version.


\(^4\) See https://www.energycodes.gov/adoption/state-code-adoptions/tracking-analysis

These estimates use PNNL’s calculated Energy Index. For commercial buildings, the Energy Index is a ratio of modeled site energy use intensity of a state current energy code to that of the ASHRAE Standard 90.1-2004 or 2006 IECC. This index allows users to estimate the relative difference between energy consumption under the State’s current code with energy consumption under one of the other versions of the model code.
Information about the Polyisocyanurate Insulation Manufacturers Association

PIMA is the trade association for North American manufacturers of rigid polyiso foam insulation – a product that is used in most low-slope commercial roofs as well as in commercial and residential walls. Polyiso insulation products and the raw materials used to manufacture polyiso are produced in over 50 manufacturing facilities across North American.

Thank you for the opportunity to submit these comments.

Sincerely,

Justin Koscher
President

cc:
Jim Shulman, Vice Mayor
Jon Cooper, Metro Council Office Director
Mike Jameson, Director of Legislative Affairs, Office of Mayor John Cooper