

Sent via Electronic Mail

February 9, 2018

Pennsylvania Uniform Construction Code Review and Advisory Council  
Bureau of Occupational & Industrial Safety  
Department of Labor and Industry  
Harrisburg, PA 17121  
[ra-uccrac@pa.gov](mailto:ra-uccrac@pa.gov)

**Re: 2015 ICC Code Re-Review Process**

Dear Review and Advisory Council,

The Polyisocyanurate Insulation Manufacturers Association (PIMA) would like to take this opportunity to comment on the review and adoption by Pennsylvania of the 2015 I-Codes, including the 2015 International Energy Conservation Code (IECC). Following the changes to the State's code adoption process enacted late last year under HB 409 (Act No. 36), **the Review and Advisory Council (RAC) should recommend the adoption of the 2015 IECC without weakening amendments.** Any controversial amendments should be decided in the best interests of Pennsylvania energy consumers and should advance Pennsylvania's broader energy policy objectives. A key goal of HB 409 is to allow the promulgation of an updated set of I-Codes even if there is disagreement over relatively few specific provisions. The status quo should no longer be an option.

**I. PIMA strongly supports adoption of the 2015 IECC for both residential and commercial buildings.**

PIMA's primary experience is with commercial construction so our comments here will focus on the benefits of updating the energy code for commercial buildings. During code updates, the significant energy-savings potential of the commercial provisions of the IECC are often overlooked, even though commercial buildings represent 19% of U.S. energy use and 35% of U.S. electricity sales.<sup>1</sup>

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<sup>1</sup> U.S. Energy Information Administration: <https://www.eia.gov/tools/faqs/faq.php?id=86&t=1>;  
<https://www.eia.gov/totalenergy/data/monthly/#consumption>;  
[https://www.eia.gov/energyexplained/index.cfm?page=electricity\\_use](https://www.eia.gov/energyexplained/index.cfm?page=electricity_use).

Retaining an older, weaker energy code (i.e., the 2009 IECC) results in higher energy costs and hurts the competitiveness of Pennsylvania businesses. Pennsylvania currently enforces a model code, which has already been revised three times at the national level (i.e., 2012, 2015, and 2018). Most states and local jurisdictions view stronger building energy codes as an effective policy that benefits the economy and the environment. **In fact, over 70% of the U.S. population now resides in areas of the country that have adopted either the 2012 or 2015 IECC for commercial buildings, clearly demonstrating that strong energy codes are a popular and a cost-effective energy policy.** In addition, all of Pennsylvania’s neighbors except for West Virginia have moved to a more current version of the IECC for commercial buildings.<sup>2</sup>

**Furthermore, the 2015 IECC helps ensure Pennsylvania residents and businesses have homes and buildings that promote general welfare and safety.** For example, in a recent Department of Energy survey, one in five respondents reported reducing or forgoing basic necessities like food and medicine to pay an energy bill and 14% reported receiving a disconnection notice for energy service.<sup>3</sup> Moreover, 2017 served as a reminder that severe weather can leave communities stranded without power for days or even weeks. Buildings constructed with energy efficiency envelopes can help protect occupants during the most vulnerable times.<sup>4</sup> The benefits of modern building energy codes are clear and the risks of failing to protect Pennsylvania’s health and safety can be easily avoided.

## **II. Energy Savings Potential for Pennsylvania Commercial Buildings and Cost-Effectiveness of the 2012 and 2015 IECC**

**Updating Pennsylvania’s commercial building energy code to the 2015 IECC would improve overall building energy performance within the State by approximately 23% (and 22% for residential construction).**<sup>5</sup> Although not within the scope of the current review, moving to the 2018 IECC would improve commercial building energy performance nationally by another 8%.<sup>6</sup>

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<sup>2</sup> Commercial Building Energy Codes in Neighboring States: **New York:** 2015 IECC/ASHRAE 90.1-2013; **New Jersey:** 2015 IECC/ASHRAE 90.1-2013; **Maryland:** 2015 IECC/ASHRAE 90.1-2013; **Ohio:** 2012 IECC/ASHRAE 90.1-2010; **Delaware:** 2012 IECC/ASHRAE 90.1-2010; **West Virginia:** 2009 IECC/ASHRAE 90.1-2007.

<sup>3</sup> “One in three U.S. households faced challenges in paying energy bills in 2015,” U.S. Energy Information Administration. Available at:

[https://www.eia.gov/consumption/residential/reports/2015/energybills/?src=%E2%80%B9%20Consumption%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20\(RECS\)-f1](https://www.eia.gov/consumption/residential/reports/2015/energybills/?src=%E2%80%B9%20Consumption%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-f1).

<sup>4</sup> “Leaks and Lives: How Better Building Envelopes Make Blackouts Less Dangerous,” ACEEE (2014). Available at: <http://aceee.org/files/proceedings/2014/data/papers/1-439.pdf>.

<sup>5</sup> DOE, Building Energy Code Program, State Level Commercial Codes Energy Use (December 2017). Available at: <https://www.energycodes.gov/adoption/state-code-adoption-tracking-analysis>.

<sup>6</sup> Preliminary Energy Savings Analysis ANSI/ASHRAE/IES Standard 90.1-2016, Office of Energy Efficiency & Renewable Energy, U.S. Department of Energy (June 2017). Available at: [https://energy.gov/sites/prod/files/2017/07/f35/Preliminary\\_90.1-2016\\_Energy\\_Savings\\_Analysis.pdf](https://energy.gov/sites/prod/files/2017/07/f35/Preliminary_90.1-2016_Energy_Savings_Analysis.pdf).

The average incremental cost of construction that would result with each new version of the commercial building energy code is: 1% for the 2012 IECC (90.1-2010);<sup>7</sup> and 0.1% for the 2015 IECC (90.1-2013).<sup>8</sup> The average simple payback of moving from 2009 IECC to the 2012 IECC for states that are in the same climate zone as Pennsylvania ranged from 3.5 years (for Connecticut) to 5.4 years (for New York).<sup>9</sup> The average simple payback period for Pennsylvania by moving from the 2012 IECC to the 2015 IECC would be immediate.<sup>10</sup> Therefore, updating Pennsylvania's energy code to the 2015 IECC from the 2009 IECC is cost effective even when measured against strict simple payback standards.

### **III. Alterations to Existing Buildings and Roof Replacements**

Another important consideration in adopting the 2015 IECC is that with each new version of the IECC, improvements are made to its effectiveness and usability. One example includes the requirements related to alterations in existing buildings, which were moved into a separate chapter within the 2015 IECC. A second example is with commercial re-roofing, where language used in prior versions of the IECC created significant confusion over when to apply the building energy code requirements to alterations on low-slope roofs. This confusion resulted in noncompliance and made it more difficult for code officials to enforce the code. In response to this confusion, the language was clarified under the 2015 IECC by drawing a clear distinction between roof replacements (i.e., existing membrane is removed and replaced) and roof re-covers (i.e., a new roof membrane is installed on top of an existing roof membrane). With this change in 2015, language in the IECC is now crystal clear, resulting in better compliance and fewer headaches for local code officials.

### **IV. 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 40 manufacturing facilities across the United States and Canada. Within Pennsylvania, PIMA members operate two corporate headquarters as well as four manufacturing facilities.

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<sup>7</sup> B. Thornton et al., National Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2010, Pacific Northwest National Laboratory, November 2013, page 4.37 (Note: estimate is based on modeling of 30 different climate-zone/building type combinations and is a non-weighted average).

<sup>8</sup> R. Hart et al., National Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2013, Pacific Northwest National Laboratory, January 2015, page 4.26 (Note: estimate is a weighted average).

<sup>9</sup> Analysis for Previous Commercial Codes, U.S. Department of Energy (Note: separate analysis was not done for PA). Available at: [https://www.energycodes.gov/development/commercial/cost\\_effectiveness\\_archive](https://www.energycodes.gov/development/commercial/cost_effectiveness_archive).

<sup>10</sup> Commercial Energy & Cost Savings Analysis, U.S. Department of Energy. Available at: [https://www.energycodes.gov/development/commercial/cost\\_effectiveness](https://www.energycodes.gov/development/commercial/cost_effectiveness).

Thank you for the opportunity to submit these comments.

Sincerely,

A handwritten signature in blue ink, appearing to be 'JK' with a long horizontal stroke extending to the right.

Justin Koscher  
President