PIMA
POLYISOCYANURATE INSULATION MANUFACTURERS ASSOCIATION

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Sent via Electronic Mail

March 23, 2018

Construction Codes Advisory Council
Attention Eileen McNiff
443 Lafayette Road N.
St. Paul, MN 55155
eileen.mcniff@state.mn.us

Re: Minnesota's Review of the 2018 IECC

Dear Construction Codes Advisory Council,

The Polyisocyanurate Insulation Manufacturers Association (PIMA) would like to take this opportunity to comment on Minnesota's review and adoption of the 2018 IECC. **PIMA strongly supports adoption of the 2018 IECC, including the clarifying language related to roof replacements** (2018 IECC Sections C202, C503.1, and C503.3.1)**.**

Although we support the adoption of the 2018 IECC for both commercial and residential 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.[1] Also, the rapid development in energy efficient technologies used in commercial buildings has allowed for large improvements in building energy performance over the last two versions of the IECC. By not keeping up with these improvements, Minnesota would lose out on the opportunity to lower energy costs and become more competitive.

I. Energy Savings Potential for Minnesota Commercial Buildings and Cost-Effectiveness of the 2015 and 2018 IECC

Updating Minnesota's commercial building energy code to the 2018 IECC would improve overall building energy performance within the State by approximately 19.4%.[2] In addition to the significant

[1] 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.

[2] 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.
"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://www.energycodes.gov/development/determinations

energy savings, the new code is extremely cost effective for commercial buildings, even when measured against strict simple payback standards. A cost-effectiveness analysis of the 2018 IECC is not yet available, but for the 2015 IECC, the average incremental cost of construction is only a tenth of one percent nationally[3] and the average simple payback period for Minnesota would be immediate.[4]

II. Alterations to Existing Buildings and Roof Replacements

PIMA supports replacing the re-roofing language in the current Minnesota building energy code with the language used under the 2015 and 2018 IECC (sections C202, C503.1, and C503.3.1). With each new version of the IECC, improvements are made to its effectiveness and usability. One example of this includes the requirements related to alterations in existing commercial buildings, which were moved into a separate chapter (Chapter 5) starting with the 2015 IECC and continued under the 2018 IECC. Included in this new chapter is clarifying language related to roof replacements. 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 (and continued in the 2018 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, which was supported by a broad coalition and received no written opposition during the ICC code development process, the language in the IECC is now crystal clear, resulting in better compliance and fewer headaches for local code officials.

In addition to the reasons stated above, adopting the 2018 IECC language related to re-roofing will help Minnesota architects, designers, and contractors who also work in neighboring states. Most of Minnesota's neighbors have already adopted or are about to adopt this same language: **Illinois** adopted the 2015 IECC three years ago and is now reviewing the 2018 IECC; **Wisconsin** adopted the 2015 IECC, effective May 1, 2018; and **Iowa** is actively reviewing and expected soon to adopt the 2018 IECC for commercial buildings. **North and South Dakota** do not have statewide energy codes, but some of the larger municipalities have adopted the 2015 IECC.

III. Additional Benefits of a Strong Energy Code for Minnesota

Building energy codes enable Minnesota businesses that lease real property to be more competitive and to invest more money back into their businesses and local communities. Sometimes referred to as an issue of "split incentives," this is particularly prevalent with commercial buildings, were businesses that rent retail, office or commercial space are responsible for paying the energy costs associated with operating the building.[5] They pay these energy costs with little to no influence over improvements that would improve energy efficiency. Minnesota's energy code can help ensure that these businesses are afforded access to energy efficient buildings.

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[3] 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).

[4] R. Hart et al., "Cost-Effectiveness of ASHRAE Standard 90.1-2013 for the State of Minnesota," Pacific Northwest National Laboratory, December 2015. Available at: https://www.energycodes.gov/development/commercial/cost_effectiveness.

[5] 39% of non-government commercial building space is leased and another 13% have a mix of owner-occupied and leased tenants (2012 CBECS data, Table B1).

It is also important to remember that buildings are responsible for 74% of U.S. electricity consumption and for Minnesota most of this electricity is produced by burning out-of-state coal and natural gas. In 2016, coal and natural gas provided 51% of the state's net electricity generation and all of this coal and natural gas came from out-of-state. Because of this relationship, weak building energy codes effectively sends money out of Minnesota to pay for the coal and natural gas produced in other states, whereas investments in energy efficiency benefit the State's local economy.

Furthermore, the 2018 IECC will help ensure Minnesota 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.[6] 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.[7] The benefits of modern building energy codes are clear and the risks of failing to protect Minnesota's health and safety can be easily avoided.

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 50 manufacturing facilities across the United States and Canada.

Thank you for the opportunity to submit these comments.

Sincerely,

Justin Koscher
President

[6] "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%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-f1.

[7] "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.