

*Sent via Electronic Mail*

July 16, 2018

New York State Energy Research & Development Authority (NYSERDA)  
New York Department of Public Service (DPS)  
[NewEfficiencyNY@nyserdera.ny.gov](mailto:NewEfficiencyNY@nyserdera.ny.gov)

**Re: New Efficiency: New York**

On behalf of Polyisocyanurate Insulation Manufacturers Association (PIMA), I am pleased to submit the following comments on NYSERDA's April 2018 white paper, *New Efficiency: New York*. 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 America, including a polyiso manufacturing facility in Montgomery, New York.

The policies and initiatives discussed in this paper will further solidify New York's leadership on energy and environmental policy and will help grow employment and strengthen the economy for New York. According to the most recent *U.S. Energy and Employment Report* there are now 2.25 million Americans directly employed in energy-efficiency jobs in the United States, 117,339 of which are in New York.<sup>1</sup> Also, in light of the current policy vacuum at the federal level, New York's leadership will encourage other states to implement similar policies and spread these environmental and economic benefits across the country.

**Building Energy Codes**

PIMA is encouraged by the emphasis placed on buildings and building energy codes as a key policy for addressing the environmental and economic consequences of energy waste. Residential and commercial buildings account for 41% of total U.S. energy use and 74% of electricity use, so measures targeted at this sector should have a relatively large impact. The most cost-effective and comprehensive tool for reducing this energy use is strong building energy codes along with quality code training and education of local code officials, designers, and builders. The benefits of reducing building energy use include: consumer and business cost savings; improved energy productivity and a stronger economy; reduction in air pollution; increased job growth; improved resiliency; and increased flexibility and reliability of our energy system and grid.

PIMA strongly supports several aspects of the white paper that we believe will have a positive impact on building energy efficiency. These include:

- Continue to improve New York's stretch code and encourage local government adoption through technical support with the goal of making the stretch code mandatory by 2022;
- Consider a requirement for zero-net energy buildings by 2028 or 2030; and
- Provide additional resources for building energy code training and enforcement.

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<sup>1</sup> *U.S. Energy and Employment Report*, National Association of State Energy Officials (NASEO) and Energy Futures Initiative, May, 2018, <https://www.usenergyjobs.org/>

In addition to our support for these measures, PIMA would like to highlight a potential obstacle to fully realizing the benefits of using the building energy code to improve the energy performance of existing buildings and a possible solution to that obstacle.

## **Existing Buildings and Energy Codes**

One of the most impactful changes to the model energy codes was in 1999 and 2000 when the scope of ASHRAE Standard 90.1 and the International Energy Conservation Code (IECC) were both expanded to cover alterations in existing buildings. Underscoring the importance of including existing buildings within the scope of the energy code, the Pacific Northwest National Laboratory (PNNL) advised states who were considering the adoption of ASHRAE Standard 90.1-1999 (which initiated the coverage of alterations in the model codes) that “the expansion of this code to existing buildings could produce nearly 50% more savings than if it were applied to new buildings alone.”<sup>2</sup> This assessment from over 16 years ago is confirmed again today in NYSERDA’s white paper, which points out that of the construction activity relevant to the building energy code, 80% is for alterations in existing buildings. The relative importance of building alterations is also reflected in state building permit data. For example, in New Jersey, alterations and renovations account for **half** of all building construction spending, with between \$7 billion and \$8 billion being spent each year on building alterations.<sup>3</sup>

The intent of including existing buildings under the energy code is to leverage the natural cycle of building upgrades and component replacement to improve energy efficiency in existing buildings. More than half of existing commercial buildings were built before state and local governments started to adopt building energy codes, so these older buildings offer a huge opportunity for energy savings and the most cost-effective time to improve a building’s energy performance is when it is renovated and/or when components and systems are replaced. As one example, more than 3 billion square feet of commercial, low-slope roofs are replaced or re-covered each year on existing buildings compared to 1 billion square feet of roofs installed on new buildings. More importantly, replacing a typical existing roof with an energy code-compliant roof reduces whole building energy use by an average of 7%.<sup>4</sup>

## **Proposed Statutory Changes to Improve the Operation of the Code**

PIMA participated in the most recent New York rulemaking on the adoption of a new building energy code, which resulted in adoption of the 2015 IECC. Based on that experience, we would like to propose a technical change to New York’s building energy code statute that we believe will improve how the code addresses existing buildings. We believe this proposal fits well within the scope and purpose of the NYSERDA white paper.

In 2010, the New York legislature made changes to the State’s Energy Law regarding the application of the State’s building energy code to alterations in existing buildings (see Chapter 560, enacted December 10, 2010, amending Article 11, the State Energy Conservation Code Act). As part of these changes, the legislature adopted a list of exceptions taken from the 2009 version of the IECC (i.e., Section 101.4.3 of the

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<sup>2</sup> Cort KA, DB Belzer, MA Halverson, EE Richman, and DW Winiarski. 2002. [Analysis of Potential Benefits and Costs of Adopting ASHRAE Standard 90.1-1999 as a Commercial Building Energy Code in Michigan](https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-14017.pdf). PNNL-14017, Pacific Northwest National Laboratory, Richland, WA, page 28, [https://www.pnnl.gov/main/publications/external/technical\\_reports/PNNL-14017.pdf](https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-14017.pdf)

<sup>3</sup> NJ Department of Community Affairs, Dollar amount of construction authorized by building permit type, July 7, 2017, [https://www.state.nj.us/dca/divisions/codes/reporter/building\\_permits.html#7](https://www.state.nj.us/dca/divisions/codes/reporter/building_permits.html#7).

<sup>4</sup> Jerry Phelan et al., [Energy and Environmental Impact Reduction Opportunities for Existing Buildings with Low-Slope Roofs](#), (Bayer Materials Science, April 2009). This report determined that, on average, commercial buildings achieve energy cost savings of 7% (with an average 12-year simple payback) by following the requirements for roof replacements under the IECC. This report is still the most comprehensive analysis available evaluating the cost-effectiveness of roof insulation upgrades in existing buildings. Ten different DOE commercial building prototypes in 13 locations and 5 climate zones were modeled using DOE’s EnergyPlus software and RS Means construction cost data. The EnergyPlus software simulates the energy use and interactions for the entire building, not just the performance of the roof.

2009 IECC, published January 2009). These exceptions have since been clarified and improved in subsequent versions of the IECC, but the language in state law has not been updated to reflect these improvements.

As a result, important differences now exist between the exceptions still listed in the NY State Energy Law and the exceptions listed in newer versions of the IECC, which New York regularly adopts as its building energy code. One of these differences, related to re-roofing, has created confusion within the market place and impedes energy-efficiency improvements to New York's existing building stock. Fortunately, this can be remedied with a technical change that deletes the exceptions listed in state law and, instead, permits the State Fire Prevention and Building Code Council to keep the exceptions current when they adopt a new version of the IECC. This proposed amendment would not affect the stringency of the code, but instead would result in an energy code that is clear, up-to-date, and similar to energy codes used in the rest of the country.

Thank you for the opportunity to submit these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read 'JK', is positioned above the typed name and title.

Justin Koscher  
President