December 7, 2022

Barry Murphy, Energy Efficiency Program Specialist
Department of Public Service
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Re: Proposed Changes to Vermont’s Commercial Building Energy Standards (CBES) & Residential Building Energy Standards (RBES)

Dear Mr. Murphy,

Thank you for this opportunity to comment on Vermont’s proposed update to the Commercial Building Energy Standards (CBES) and Residential Building Energy Standards (RBES). The Polyisocyanurate Insulation Manufacturers Association (PIMA) urges the Department to modify the proposed provisions for incentivizing the tracking and reduction of embodied carbon in insulation products should these provisions be retained as part of the final standards. Please see our suggested modifications below.

For nearly a decade, the insulation industry has been a leader in the development of Environmental Product Declarations (EPDs). PIMA supports their use as one of many factors considered in the specification process for insulation and other building materials. Along with energy efficiency, reducing the level of embodied carbon in building construction is an important policy for addressing the entire impact that buildings have on the environment. Addressing embodied carbon at the whole building level should be the goal. Policies that incentivize the appropriate and transparent use of EPDs can further this goal by raising awareness within the construction industry. However, policies that set product specific limits, by definition, restrict product choices and create the potential for regrettable substitutes. More importantly, product specific limits ignore the life cycle impacts of the whole building and do not necessarily guarantee a net environmental benefit. PIMA also cautions against possible misuse or oversimplification of the global warming potential (GWP) estimates contained in EPDs. Unlike R-values or U-factors for insulation products, GWP estimates are not always directly comparable due to a variety of factors, including the information and assumptions on which the GWP estimates are based.
Recommendations

Updated GWP Values for Polyiso: PIMA publishes third-party verified, ISO-compliant EPDs for polyiso products. The reports are available at: https://www.polyiso.org/page/EPDs. The proposed default insulation GWP values included in proposed Tables C406.3.9(2) and R408.1.2 are different than the values included in the PIMA industry-averaged EPD for roof insulation for the covered lifecycle stages. We request that these be revised to reflect the North American industry-averaged values reflected in the PIMA EPDs. The GWP values for the sum of lifecycle stages A1-A3 according to the PIMA industry-averaged EPDs are as follows:

<table>
<thead>
<tr>
<th>Material</th>
<th>GWP Value (kg CO2e/sq. m. RSI-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyiso, Roof Board* (GRF facer)</td>
<td>2.11</td>
</tr>
<tr>
<td>Polyiso, Roof Board* (CGF facer)</td>
<td>2.95</td>
</tr>
<tr>
<td>Polyiso, Wall Board</td>
<td>4.10</td>
</tr>
</tbody>
</table>

Footnote Regarding Roof Replacements: PIMA also recommends that for commercial roof insulation products, the following footnote be added to the table alerting the user to a distinction that is important in comparing polyiso with other insulation products that are installed in roofs as above deck continuous insulation:

“The GWP values for polyiso roof insulation products reflect the impacts of a full roof replacement during the building’s 75-year service life. This results in higher reported environmental impacts and should be considered when reviewing the declarations for alternative insulation materials.”

The EPDs for other roof insulation products do not necessarily account for this full roof replacement, which would potentially result in GWP values 50% less than what they would be using more conservative assumptions regarding product replacement.

Industry Averaged vs. Product Specific EPDs: The proposed default values in Tables C406.3.9(2) and R408.1.2 use industry averaged values so there is no reason or justification for requiring a product specific EPD as an alternative to the default values. An industry averaged value should be sufficient. For example, a builder should be allowed to use a value that is supported by a current industry averaged EPD for which the manufacturer of the product in question participated. In the case of the Polyiso roof insulation EPD, all the participants are listed on page 3 of the report. This is common practice for all industry averaged EPDs.

Summary

With respect to the proposed increases in minimum thermal envelope efficiency requirements, PIMA commends Vermont for its leadership and innovation in addressing climate change. Building energy codes are the most cost-effective policy for achieving this goal, and Vermont’s proposals for increasing the minimum envelope performance overall will result in much greater savings for consumers. A more efficient building thermal envelope will support the transition to electric heat pumps and other building decarbonization strategies. Also, the thermal
envelope is difficult to improve after a building is constructed and can last the entire life of a building. Therefore, these improved requirements will benefit Vermont residents, business, and the environment for decades.

With respect to embodied carbon, we urge caution on this new policy approach. At this stage of policy development, it would be progress to offer incentives for using products (insulation, steel, concrete, glass, and other products) that are covered by EPDs. The proposed 0.5 kg CO2e/ft.2 and 0.5 kg CO2e/ft.2 insulation limits and the corresponding credits appear arbitrary and do not ensure that the net embodied carbon of the entire building is less if other materials or design aspects increase embodied carbon.

About PIMA

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.

Thank you for the opportunity to submit these comments. Please contact me should additional information be necessary (jkoscher@pima.org, 703-224-2289).

Sincerely,

Justin Koscher
President