

Submitted via online portal

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California Air Resources Board

Embodied Carbon

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RE: Comments on CARB's Proposed Reporting and Baseline Options for Building Embodied Carbon

The Polyisocyanurate Insulation Manufacturers Association¹ (PIMA) appreciates the opportunity to comment on the information and framework presented at the California Air Resources Board's (CARB) March 13, 2025, workshop on "Reporting and Baseline Options for Building Embodied Carbon." PIMA represents North American manufacturers of polyisocyanurate (polyiso) insulation products, which are used to reduce energy waste, improve the resilience, and increase the occupant wellbeing in homes and buildings throughout California. Polyiso insulation manufacturers are leaders in the production of energy-saving technology and environmental reporting.

We applaud CARB's stakeholder engagement approach to implementing Assembly Bills (AB) 2446 and 43 and encourage CARB to align its requirements with existing industry practices for evaluating and reducing the embodied carbon associated with construction materials and buildings. PIMA believes that this alignment is critical to California's ability to meet the aggressive carbon savings targets for its building sector.

The polyiso insulation industry has been a leader in the development of environmental impact reporting practices.² In 2015, PIMA members published the first edition of industry-average Environmental Product Declarations (EPDs) for polyiso products. Now, in 2025, the industry is preparing to publish the third generation of third-party verified, ISO-compliant EPDs for polyiso products produced in North America. This leadership role is shared by the industry association and individual manufacturers, many of which have or are now embarking on publishing product-specific EPDs.

¹ For more information on PIMA and polyiso insulation products, visit www.polyiso.org.

² PIMA's industry-average EPDs for polyiso insulation products are available at: <https://www.polyiso.org/page/EPDs>.

Our industry's journey has extended over 10 years and continues to evolve. We recognize that the insulation industry as whole is years (or even decades) ahead of other critical construction material sectors. Based on our experience and considering the current status of environmental impact reporting practices for other construction material categories, we strongly encourage CARB to work with industry to leverage current best practices and establish reasonable requirements and achievable targets under AB 2446 and 43.

1. CARB has the authority to align its reporting requirements applicable to construction materials with existing standards and practices that govern the publication of EPDs.

EPDs provide a standardized, third-party verified approach to verifying the environmental impacts associated with specific stages of a product's life cycle. While the Product Category Rules (PCRs) that establish the requirements for life-cycle assessments (LCAs) and EPDs for specific product categories can vary, we strongly encourage CARB to accept EPDs prepared in accordance with recognized PCRs. California-specific requirements for EPDs that diverge from, or conflict with, currently accepted PCRs will create an undue burden on manufacturers as well as the community of LCA practitioners. Manufacturers may be unable to generate EPDs that satisfy California-specific requirements while maintaining EPDs that comply with governing PCRs for other domestic or international markets. LCA practitioners are in high demand as industries and manufacturers race to develop PCRs and EPDs. Imposing unique requirements for products sold in California creates significant challenges for third-party experts who are already stretched thin with current demand.

The international standards (e.g., EN 15804; ISO 21930; ISO 14025) that govern the development of PCRs should give confidence to CARB that the EPDs published in accordance with these rules are developed through open, consensus-based processes and are sufficient to satisfy the requirements established by the California legislature. PCRs are developed through consensus processes that reflect the input and expertise of both industry and non-industry participants. CARB can provide input directly into the processes used to develop and maintain PCRs.

Therefore, we encourage CARB to work within existing standardized requirements rather than write its own rules for EPDs.

2. CARB has the authority to recognize product-specific EPDs to verify the environmental impacts of construction materials sold in California.

While manufacturers that operate multiple manufacturing facilities may choose to publish (and submit for compliance) facility-specific EPDs, mandating the publication of facility-specific EPDs for construction materials sold in California is overly burdensome and unnecessary. In the case of polyiso insulation, for example, the majority (85-90% for polyiso) of environmental impacts are attributable to raw materials (A1 stage). Facility level impacts represent a relatively small percentage of total impacts. Additionally, a manufacturer that produces the same product at multiple facilities will, in almost all cases, use similar raw materials and formulations. In these instances, product-specific EPDs provide an appropriate and conservative representation of environmental impacts. Therefore, we encourage CARB to reconsider its broad facility-specific EPD mandate.

While we understand the rationale for CARB's proposed alternative compliance path that allows facility level data to be reported (when an applicable EPD is not available) and do not oppose alternative options for manufacturers that voluntarily opt in, we believe that a facility-specific analysis is unnecessary for products where a significant portion of the overall impacts is confined to raw materials (A1 stage). That said, facility-specific EPDs or data submittals should be accepted where available.

Therefore, we strongly encourage CARB to consider the sufficiency of product-specific EPDs for appropriate materials like polyiso insulation.

3. CARB's requirement for the submittal of environmental impact information that is no more than two years old is unnecessary and inconsistent with current standards and practices for EPD development.

First, we are unaware of any requirement under AB 2446 and 43 that limits CARB's ability to rely on environmental impact information that is more than two years old. As CARB embarks on the challenging task of creating a comprehensive plan for reducing embodied carbon, we encourage CARB to align its requirements with current standards and practices for EPD development.

Second, CARB's proposed requirement that primary and secondary data used to develop EPDs be no more than two years old is excessive and likely impractical for most industries. The process to collect and analyze primary data used for developing EPDs is time intensive. To comply with CARB's two-year limit, a manufacturer, in practice, would be required to

annually revise and republish EPDs because the reference year used for the analysis would constantly age out.

While extremely burdensome, the constant revision of EPDs is also unnecessary. Significant changes in impacts are unlikely year over year. Current rules establish a 5-year period of validity for EPDs. This period of validity balances various considerations, including timeliness of data, frequency of significant changes, and burden on the reporting party.

With respect to secondary or background data, a two-year limit would make it impractical or even impossible to produce EPDs. PCRs establish guidelines (or limits) regarding the age and quality of the life cycle inventory data used. These requirements reflect both the consensus opinion of what is reasonable for a particular product category as well as the realities of data availability. Significant advancements in the collection of more accurate and current life cycle inventory data are underway across industries and the LCA practitioner community. However, a requirement for “real time” data is beyond current capabilities.

Therefore, we strongly encourage CARB to remove any age limit on the life cycle inventory data and rely on the requirements established in governing PCRs.

4. CARB should establish reasonable timelines for the submittal of EPDs for covered products based on industry input and practical considerations such as LCA practitioner availability.

We understand that CARB is proposing to require certain manufacturers to submit EPDs (or equivalent data) beginning in 2026. Under the current proposal for facility-specific EPDs, a 2026 deadline may not be feasible for all covered product categories.

Today, certain manufacturers may publish product-specific EPDs for products or product categories. For other manufacturers, the process for developing product-specific EPDs may be underway. The practice of producing facility-specific EPDs, especially for manufacturers that produce the same product at multiple facilities, is not widely adopted.

CARB is proposing that the construction industry pursue a dramatic shift in material transparency reporting on a timeline that now measures less than one year. As mentioned previously, a tremendous amount of work is underway to develop new PCRs, cover more product categories with industry-average EPDs, and produce additional product-specific

EPDs in segments with more mature material transparency reporting practices. We believe CARB can align its actions under the mandate of AB 2446 and 43 with the realities facing the construction material manufacturing industry.

We understand that CARB is surveying manufacturers on existing data collection and reporting capabilities and practices. We believe the survey results will reinforce the points raised above and should be used to develop an implementation plan that provides for additional flexibility in terms of both deadlines and the details of material transparency data reported to CARB.

5. In identifying products that are likely to account for a significant share of total embodied carbon emissions, we encourage CARB to consider insulation's role in reducing operational carbon emissions.

We understand that CARB may prioritize or establish reporting timelines for material categories based on the likelihood that a particular segment accounts for a significant portion of operational carbon emissions. We also understand that CARB is proposing to adopt a wholistic approach to evaluating carbon emissions associated with the building sector by including both embodied and operational carbon emissions. Therefore, as part of the material prioritization process, it would be appropriate to consider insulation's role in significantly reducing operational carbon emissions associated with building energy use.³ Moreover, polyiso insulation can be installed as the air and weather barrier – reducing the need for other materials and further improving building performance by reducing energy loss through air leakage.

While whole building carbon emission assessments can include insulation products, its critical role in reducing operational carbon emissions should be considered when (1) establishing the reporting timeline applicable to insulation manufacturers and (2) the nature of the reported information (e.g., product-specific EPD versus facility-specific EPD). We believe that insulation's significant role in reducing carbon emissions associated with the operational phase of a building's life cycle merits a more flexible approach to the requirements applicable to insulation manufacturers. This would include accepting product-specific EPDs from manufacturers and establishing a submittal deadline of 2027 or later.

³ PIMA and the insulation industry have sponsored multiple third-party studies of insulation's role in significantly reducing operational carbon emissions. These studies that document the "carbon payback" associated with the installation of various insulation products are available at: <https://www.polyiso.org/page/InsulationSavingsReports>.

6. We applaud CARB's proposed approach to Whole Building Life Cycle Assessment, including its recognition of both embodied and operational carbon emissions.

We support the goal of conducting building level analysis using recognized Whole Building Life Cycle Assessment (WBLCA) practices. The information and tools required to pursue WBLCA continue to evolve, and we encourage CARB to align requirements with recognized standards, tools and product databases. Only WBLCA provides a complete picture of a building's footprint, while preserving needed flexibility to owners and designers to select products, assemblies and systems that meet unique project-specific requirements.

To the greatest extent possible, we encourage CARB to support the deployment of WBLCA practices that include all significant elements of a building. Focusing on a limited set of building elements or products risks ignoring key sources of environmental impacts.

In practice, individual building materials or components are not used in isolation. Products are designed and installed as part of more complex assemblies and systems. The design of these assemblies and systems is determined by the expertise of building designers and engineers, and the environmental impacts of materials and components should be evaluated at the whole-building level so as not to interfere with the judgement of construction professionals and experts.

Additionally, WBLCA allows practitioners to analyze the impacts of the construction phase along with the operational phase. Analyses that focus exclusively on the construction phase ignore the impacts of the operational phase, which includes energy, water and resource use as well as the replacement of certain building elements. Moreover, consideration of the operational phase impacts and savings is necessary to properly characterize the key role of products like insulation that reduce carbon emissions during the building use phase.

Regarding implementation and with the assumption that larger projects are often more sophisticated or have access to greater resources, we support CARB's general approach to creating different implementation timelines for buildings of varying sizes. We encourage CARB to consider input received from the design community as well as building owners to identify practical building size thresholds for WBLCA compliance deadlines.

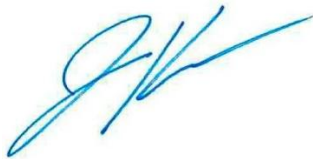
We applaud CARB for using its charge to establish comprehensive WBLCA practices as the benchmark for carbon analysis in the built environment.

7. Conclusion

We urge CARB to follow standardized processes for EPDs and recognize the adequacy of product-specific EPDs for materials like polyiso. We recommend removing age limits on life cycle inventory data and relying on established PCRs. CARB's survey of manufacturers should guide a flexible implementation plan for deadlines and data detail. Given insulation's role in reducing carbon emissions, a flexible approach for insulation manufacturers is essential. We commend CARB for setting comprehensive WBLCA practices as the benchmark for carbon analysis in the built environment.

Please contact me at jkoscher@pima.org if additional information or discussion would be helpful to your process.

Sincerely,

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

Justin Koscher
President