Summaries of the FY 23–24 IRA 60112 Grant Selections:

Reducing Embodied Greenhouse Gas Emissions for Construction Materials and Products

In support of Inflation Reduction Act Section 60112, the goal of this grant program is to support businesses that manufacture construction materials and products to develop and verify Environmental Product Declarations (EPDs), and states, Indian Tribes, and nonprofit organizations that will support such businesses.

See here for a list of selectees grouped by EPA Region.

Please note:
Awards are not official until a Notice of Award is signed by the EPA Award Official and issued by the EPA Office of Grants and Debarment. Additional information on completing the award process will be contained in the Notice of Award.

Aluminum Extruders Council

- National
- Selected Funding Amount: $699,366

The Aluminum Extruders Council (AEC) has approximately 120 member companies covering extruders, suppliers and aluminum billet producers with operations across the U.S. and around the globe. In the U.S., there are more than 200 extrusion and cast house facilities operating in 36 states, and over 510 presses operating in North America that produce approximately 5 billion pounds of aluminum extrusions each year for the building and construction, transportation, consumer and industrial sectors. Within building construction, aluminum extrusions are key components in windows, doors, curtain walls, storefronts, railings, canopies, sunshades, louvers, furniture, solar panel systems and much more.

This project plans to increase the availability, quality and granularity of EPDs for a key construction material—aluminum extrusions—to improve environmental transparency, enable design decisions for sustainable construction, and support continuous improvement to reduce embodied greenhouse gas emissions. The project will support development of an “EPD generatcoor” tool for aluminum extrusions that will expand access and accelerate EPD development for extruder companies. It will also collect improved end-of-life LCA part D data on aluminum recovery and recycling from building deconstruction.

Improving emissions data quality and expanding access for businesses to demonstrate environmental transparency through EPDs will support future reductions in embodied ghg emissions associated with aluminum extrusions. Transparency and benchmarking will lead to continuous improvement within the industry, enabling business decisions based on improved information for both environmental and financial impacts.

American Center for Life Cycle Assessment

- National
- Selected Funding Amount: $10,000,000

The American Center for Life Cycle Assessment (ACLCA) is the largest nonprofit membership organization for environmental LCA professionals in North America. Its members include representatives from industry, academia, consulting, government and NGOs. ACLCA's committees provide members with a forum for sharing, learning, and developing tools, resources, and guidance to build capacity, spread knowledge, and enhance the application of LCA and life cycle thinking (LCT).

ACLCA's project focuses on three areas: workforce development, EPD standardization, and data integration and harmonization. The project's goals are to increase the number of practitioners in the field by establishing LCA competencies and other industry standards, to enhance EPD standardization across sectors by updating and enhancing ACLCA's PCR Guidance and a PCR repository, and to establish a life cycle inventory data center to curate and support background data for use in PCRs. This project will yield an adoptable framework to reduce embodied greenhouse gas emissions in construction materials and products.

American Wood Council

- National
- Selected Funding Amount: $6,000,000

The American Wood Council (AWC) is a nonprofit organization committed to ensuring a resilient, safe and sustainable built environment. AWC is a leader in developing engineering data, technology and standards for wood products. AWC is committed to providing education about wood design, green building policy, and resiliency, and leads U.S. wood products associations in efforts to improve the quality of data for LCAs and EPDs.

AWC's project will expand the amount of data and enhance transparency about U.S. wood products. The project will seek to advance EPDs for wood products by improving primary life cycle data collection and reporting, updating PCRs, conducting a gap analysis, creating

an EPD generator tool, improving disclosures for wood in Whole Building Life Cycle Assessments, and administering pass-through grants to U.S. wood product manufacturers to create EPDs. AWC estimates that at least 2,000 U.S. wood products mills, and 15,000 architecture, engineering, and construction (AEC) professionals will be reached through the project.

Atlas Roofing Corporation

- 18 states/Georgia
- Selected Funding Amount: $733,940

Atlas Roofing Corporation is a provider of asphalt shingles, roof underlayments, rigid expanded polystyrene and polyiso insulation, geofoam, cold chain, protective packaging, lost foam, and coated and paper facers and underlayments, produced from four segmented divisions: Polyiso Roof & Wall Insulation, Shingle and Underlayment, Molded Products and Web Technologies.

Atlas Roofing Corporation's project will develop detailed LCAs and verified EPDs for the products it manufactures. The company will also develop a life cycle inventory of glass facer products used in the production of insulation and roofing materials to advance industry-wide transparency. By providing precise impact data associated with different products, Atlas Roofing Corporation will empower building designers to select less impactful materials and contribute to a more accurate understanding of the nuances of sustainability considerations across the roofing industry.

Belter Tech Inc.

- Atlanta, Georgia
- Selected Funding Amount: $723,660

Belter Tech is addressing the global environmental impact of construction by combating greenhouse gas emissions and utilizing waste glass, plastics and polyisocyanurate foam from landfills for aggregate in cement/concrete production.

Belter Tech's project will focus on contributing new and critical data for producing high-quality EPDs for alternative aggregate products and to establish robust tools to make the EPD process easier, faster, and more cost effective for carbon capturing products. Their project to develop EPDs for sustainable construction materials will enhance transparency and efficiency in carbon-capturing product certification. In addition, Belter Tech will lower its greenhouse gas emissions and achieve net-zero carbon neutrality by 2025.

Building Materials Reuse Association

- National
- Selected Funding Amount: $6,639,427

Build Reuse is a nonprofit organization dedicated to supporting the reuse industry in the U.S. For this project, Build Reuse will act as a pass-through entity to provide sub-awards and technical assistance to support the generation of EPDs for minimally processed salvage construction materials and products across the U.S. All sub-award EPD development recipients will receive LCA education and LCI data collection training and mentorship as a condition of the sub-awards. Build Reuse conducts an annual deconstruction and reuse conference with an average of 300 participants with dedicated tracks devoted to LCA topics.

Build Reuse plans to develop a digital LCA-EPD generator software tool, enhance its capabilities as a program operator and create a sub-category PCR for salvaged and reprocessed construction products. The project will generate data on “average” use, quality, service lifespans, past uses and end-of-life in key product group categories for use in product circularity activities such as design for reuse and materials passport development.

Collaborative Composite Solutions Corporation

- National
- Selected Funding Amount: $6,000,000

American Composites Manufacturers Association (ACMA) is the leading U.S. composites industry association, with more than 300 member companies in 49 states and Washington, D.C. The Institute for Advanced Composites Manufacturing Innovation (IACMI) is part of the Manufacturing USA Composites Institute, with more than 140 members in 38 states.

In partnership, ACMA and IACMI will deploy an industry-funded LCA-EPD generator and developing EPDs for composite construction materials and products. Their project will include developing new PCRs and modifying existing PCRs where needed, educating more than 200 manufacturers and their customers on the use of EPDs, and working with universities to develop gate-to-grave data that can be incorporated into EPDs.

This project will address a current need as well as harmonize technological advancement with environmental responsibility and pave the way for a more sustainable future in construction and infrastructure.

Cornell University

- Central New York and California Bay Area
- Selected Funding Amount: $2,499,999

This project will address gaps and challenges in the deconstruction-to-reuse value chain by convening experts across academia, industry and nonprofit organizations. The group will develop a Salvaged Products Passport (SPP) that combines a robust EPD+ dataset with elements of a product catalog (or materials passport) to enable adoption of reuse by industry at scale.

With their project partners - the Cornell University Circular Construction Laboratory (CCL), Urban Machine (UM), Finger Lakes ReUse (FLR) and Build Reuse (BR) – the grantee will develop a process and template called Salvage EPD (SEPD) that will function as a product catalog for salvaged materials when used with a materials passport. These two sources of documentation will form a Salvaged Products Passport (SPP). The goals of the SPP are to spur market demand, enable application and procurement of salvaged materials, increase the transparency of greenhouse gas data, and assist businesses in disclosing and verifying this data.

EIFS Industry Members Association

- Northeast, Mid-Atlantic, Southeast, Midwest, Southwest and Western United States
- Selected Funding Amount: $2,189,939

The EIFS Industry Members Association (EIMA) is a nonprofit trade association that represents the Exterior Insulation and Finish Systems (EIFS) industry, including suppliers, manufacturers, contractors, architects and other EIFS industry stakeholders. EIFS is an integrated, cost-effective, durable and highly energy-efficient exterior cladding system used broadly in construction projects in the U.S.

For its project, EIMA plans to develop LCAs and robust EPDs for EIFS products, producing a combination of industry-wide and facility-based EPDs. EIMA intends to contract with a reputable LCA provider with a goal of working with 100% of American EIFS manufacturers to develop 77 EPDs, covering as many as 1,350 EIFS variations. The project seeks to ensure that the construction industry has complete data on the environmental impact of utilizing EIFS products across their life cycle.

EIMA will provide technical assistance to manufacturers to improve their capacity to develop and utilize EPDs in the future. EIMA will also work with EIFS installers, contractor organizations, and the established labor union to support training, including to residents in underserved communities, as part of its workforce development strategy.

Evanston Rebuilding Warehouse (dba the Rebuilding Exchange)

- Chicago metropolitan area (locations in Chicago & Evanston)
- Selected Funding Amount: $3,887,329

The Evanston Rebuilding Warehouse (dba the Rebuilding Exchange) is a Chicago-based nonprofit organization with a mission to reuse building materials, reduce construction waste, and train, support, and connect people seeking careers in the building trades. Rebuilding Exchange diverts building materials from landfills through two reuse retail stores in Evanston and Chicago and offers deconstruction services to homeowners who want to save their building materials from landfills.

Rebuilding Exchange will use data collected at its two reuse stores and through its deconstruction services to demonstrate the reduced embodied greenhouse gas in salvaged construction materials. Through this project, they will develop 25 EPDs, train 150 participants through a workforce training program, share data online.

The goal of the project is to enhance the quality of greenhouse gas data associated with salvaged materials, provide tools for other practitioners, create new/updated EPDs that demonstrate the significant embodied carbon reduction and other environmental impacts of salvaged materials, and spur market demand.

Global Bamboo Technologies, Inc.

- Ocala, FL/National
- Selected Funding Amount: $282,768

BamCore is a U.S.-based building components manufacturer specializing in the use of structural biogenic fibers to help drive decarbonization of the built environment. BamCore's project will develop an industry-consensus approach for how to dynamically calculate biogenic carbon in EPDs as input into the American Center for Life Cycle Assessment's (ACLCA's) PCR Open Standard. As a proof of concept, the project team intends to create prototype PCRs and EPDs that conform to this new standard. The goal of the project is to increase standardization of all EPDs that leverage biogenic materials. The proposed approach will also include a mechanism for fair and accurate comparison of biogenic and non-biogenic materials.

The project will assist businesses in disclosing and verifying data by providing clear, industry-led, consensus-driven guidance on biogenic carbon accounting that will be incorporated into all PCRs and EPDs and align with the ACLCA's PCR Open Standard. The project will also enhance the accuracy of environmental claims associated with biogenic

materials and empower decision makers to make more informed choices, thus spurring market demand for low embodied carbon products.

GO Lab, Inc. (dba TimberHP)

- Maine
- Selected Funding Amount: $418,420

The carbon footprint of insulation products is second only to concrete due to the materials used in its manufacture and the energy required for its production. GO Lab, Inc. (dba TimberHP), a construction insulation manufacturer, is the first in North America to produce insulation board, batt and loose fill insulation from wood fiber. Cost-competitive, renewable, recyclable, nontoxic and carbon sequestering, insulating wood fiber composites have been manufactured at scale in Europe for over two decades but were not widely available in the U.S. until TimberHP's facility in Madison, Maine commenced production in 2023.

GO Lab/TimberHP's project focuses on developing accurate and transparent EPDs of scalable, carbon-negative insulation products. TimberHP will install equipment and software that will enable it to comprehensively capture energy and raw material usage data and properly allocate that usage to each production line. The data will be used to support the development and publication of EPDs for each of the company's three product lines over its first five years of production.

Heidelberg Materials US, Inc.

- United States
- Selected Funding Amount: $5,000,000

Heidelberg Materials, a supplier of heavy building materials in the U.S., holds top positions in portland and slag cement, fly ash, concrete aggregates and ready-mixed concrete across 28 states. Actively participating in industry-wide EPD committees and task forces, Heidelberg Materials contributes to the establishment of PCRs and engages in sustainability research, environmental impact assessments and green product development.

Heidelberg Materials proposes to create a robust, web-based tool that can help ready-mix concrete, cement and aggregate facilities produce EPDs, connect data flows with corporate ESG reporting, and enable real-time adjustments. The goal of the tool is to incorporate all the data needed to produce LCAs, create EPDs, utilize benchmarking tools/EPD repositories and publish EPDs.

To assist and improve the industry as a whole, the tool will be made public. The creation of a rapid and efficient EPD builder holds the potential to revolutionize carbon accounting and decision-making that will drive sustainability across the industry, enhancing the competitiveness of environmentally conscious manufacturers.

Hemp Building Institute

- Maryland, Tennessee, California and Alabama
- Selected Funding Amount: $6,186,200

Hemp Building Institute (HBI) is nonprofit organization that provides support for entities that manufacture, remanufacture and refurbish construction materials and products. Biogenic materials from agricultural crops such as hemp, soy, and straw bale provide a unique opportunity to directly address climate change and reduce greenhouse gas emissions from the built environment.

The Biogenic Building Materials project will focus on developing EPDs and LCAs for biogenic materials. This project will create a standardized cradle-to-gate PCR for agricultural crop components that will be combined with gate-to-grave, industry-determined PCRs to create a practical EPD generator tool for biogenic building materials. PCRs are cradle-to-gate for agriculture and cradle-to-grave for hempcrete.

This project will also include educational outreach and training, including assisting businesses, states, and tribes in disclosing and verifying data via EPDs. Project organizers will develop an open-source database for biogenic materials and provide extensive education, training, and technical assistance. The overall goal of the project is to assemble the assessments, protocols, tools and training in an ecosystem designed to increase adoption of biogenic building materials from agricultural crops.

Holcim US, Inc.

- Nevada, Colorado, Maryland, Massachusetts, Utah, Texas, Oklahoma, Ohio, Illinois, Mississippi, Pennsylvania, Alabama, South Caroline, Missouri, New York and New Jersey
- Selected Funding Amount: $1,371,814

In the U.S., Holcim is the largest cement manufacturer and top five producer in aggregates and ready-mix concrete, with approximately 7,000 employees. Holcim's EPD Accelerator Project will increase the transparency of data on environmental emissions associated with the production of construction materials, generate robust EPDs with a diversity of manufacturers from across the U.S., and drive market demand for lower carbon

construction materials. These projects represent the three construction materials in Holcim's portfolio: cement, asphalt and ultra-high-performance concrete.

These projects will support the development, enhanced standardization and transparency, and reporting criteria for EPDs that include measurements of the embodied greenhouse gas emissions of the material or product associated with all relevant stages of production, use and disposal, and conform with international standards for construction materials and products.

International Code Council

- Oregon and Washington
- Selected Funding Amount: $3,500,000

The International Code Council Evaluation Service (ICC-ES) is a program operator seeking to generate EPDs in partnership with the states of Washington and Oregon. Through the Pacific Northwest (PNW) EPD Partnership, the project focuses on developing facility-specific EPDs for concrete, asphalt, steel, wood and "emerging" products (e.g., salvage wood, tile, paint, windows, roofing).

The PNW EPD Partnership will take an integrated and collaborative approach to significantly improve the availability and quality of facility-specific, third-party verified EPDs for building products and materials made and/or used in Oregon, Washington, and the greater PNW region by assisting manufacturers in disclosing and verifying their data through robust EPDs. The project intends to support more than 200 PNW manufacturers to develop more than 1,000 new EPDs.

The project's three-pronged approach includes training for ready-mix concrete, asphalt, and steel fabricators; developing a new structural wood EPD tool using wood product manufacturers' LCI information; and providing technical support for "emerging" products to develop and verify EPDs. This project will also have an education, outreach and technical assistance component, primarily focused on businesses producing building materials.

International Living Future Institute

- National
- Selected Funding Amount: $4,662,182

Leveraging the success of its health-oriented product label, Declare, International Living Future Institute (ILFI) will employ a similar model to enhance EPD data quality and accessibility; motivate manufacturers with recognition; aid architecture,

engineering, and construction (AEC) professionals in product selection; and cultivate a community of practice.

The project will create industry-aligned technical requirements, a user-friendly data platform, a compelling product label, and awareness-building activities. The new label, a comprehensive tool to assess and support EPD performance and streamline specifications for climate-friendly products, anticipates increased EPD adoption, improved environmental product performance, and greater industry awareness.

With tiered achievement levels that recognize product optimization, the program will motivate participating manufacturers to improve their environmental product performance.

Knauf Insulation, Inc.

- Alabama, California, Indiana, Michigan, Texas and West Virginia
- Selected Funding Amount: $3,283,879

Knauf Insulation, Inc. (Knauf) is a building materials company that manufactures fiberglass insulation, delivering thermal and acoustical solutions for residential, commercial, industrial and OEM applications. Knauf is one of thelargest fiberglass insulation manufacturer in the U.S. Knauf's project will aim to improve the quantity, quality and robustness of data used to develop EPDs, exemplify best practices as related to data disclosure and verification, and spur market demand for low embodied carbon construction products. Knauf recently made a significant capital investment into energy monitoring equipment at their facilities to measure processes and reveal efficiency improvement opportunities, including the reduction of greenhouse gas emissions from manufacturing. This will improve the granularity and quality of data used for the development of EPDs.The project proposes using technical expertise and assistance to enable contractors to perform LCA assessments for EPD development and verification, with a goal of developing EPDs for 100% of Knauf's product portfolio, including new and optimized versions of current EPDs. In addition, Knauf will produce a best practice manual on EPD development for industry-wide stakeholders and provide educational seminars to employees at Knauf manufacturing facilities on greenhouse gas reductions.

Massachusetts Institute of Technology

- Various regions
- Selected Funding Amount: $997,412

Despite the potential carbon and cost benefits, there are still many barriers to adoption of structural steel element reuse, including supply chain dynamics and availability, absence of trust and communication, and lack of reuse markets. This project will develop an

academic hub for advancing rigorous reused steel EPDs through researching the carbon implications of structural steel reuse (including reproducible regional EPDs), establishing industry collaboration and a reused steel supply chain network for market development, and providing regional guidance for publishing the open data needed for robust reused steel EPDs.

This project will maximize efficiency and reach by producing LCAs in various formats, (including a reproducible EPD), advising fabricators on how to manage EPDs for reused and surplus steel, publishing educational resources on EPD reuse frameworks for all supply chain actors, improving municipal-level data quality and quantity, improving data quality and quantity about deconstruction processes, ensuring the use of different data distribution methods and expanding EPD generation capacity of manufacturers.

Finally, the project will include the development of an annual workshop on steel reuse, which will bring together stakeholders from industry and academia to advance the widespread adoption of steel reuse and to quantify the resulting costs and carbon reductions.

National Asphalt Pavement Association

- National
- Selected Funding Amount: $10,000,000

This project will focus on: (1) making EPDs for asphalt mixtures more robust and broadly available by improving the existing EPD program and providing rebates for companies who publish EPDs; (2) enabling the assessment of the full life cycle of flexible pavement by establishing a flexible pavement PCR or LCA standard and related tools; and (3) implementing workforce development and education programs on EPDs for asphalt mixtures and whole-life EPDs or LCAs for flexible pavements. The NAPA project's key partners include Auburn University, the University of New Hampshire, Oklahoma State University, the University of Washington, the University of Nevada at Reno, Construction Partners Inc., and Lindy Paving.

The project will enhance the existing EPD program by updating the PCR for Asphalt Mixtures and developing a new PCR for dry mix additives. Additionally, it will create tools and resources for flexible pavement life cycle assessments, including datasets for construction, maintenance and end-of-life scenarios. A rebate program will be established to encourage EPD development among asphalt mix producers, particularly targeting small businesses and disadvantaged communities. Furthermore, the project will offer educational modules and credentialing programs to train stakeholders on best practices in EPD development and usage, promoting widespread adoption and informed decision-making in the industry.

National Glass Association

- National
- Selected Funding Amount: $2,146,625

The National Glass Association will develop manufacturer specific EPDs in the following ways: (1) aggregate data on primary flat glass life cycle inventories, (2) develop an EPD generator for processed glass, (3) assist glass fabricators with EPD development, and (4) potentially collecting end-of-life LCA data on architectural glass recycling. This initiative will significantly advance the availability and quality of EPDs for architectural glass, a critical material in construction for its energy performance, daylighting, and occupant well-being benefits.

The project will support the collection of regionalized LCI data for primary flat glass, development of an EPD generator tool to streamline the creation of processed glass EPDs. Additionally, it will gather end-of-life LCA data to enhance understanding of glass recycling and its environmental impacts. This comprehensive approach will facilitate improved environmental transparency and support efforts to reduce embodied greenhouse gas emissions in the construction industry, aligning with federal initiatives and promoting sustainable practices across the glass industry supply chain.

National Ready-Mixed Concrete Association

- National
- Selected Funding Amount: $9,632,293

The National Ready-Mixed Concrete Association (NRMCA) proposes to increase the quantity and robustness of ready-mix concrete EPDs by providing grants to producers to create EPDs from an additional 3,000 plants (up from 1,500 currently). NRMCA plans to provide data quality management oversight and training, as well as education for producers by training five EPD verifiers and certifying up to 500 EPD specialists through an online education system. NRMCA also plans to enhance its existing low-carbon concrete tool and host five low-carbon concrete training workshops per year for five years. NRMCA will work to improve PCRs and data availability for critical inputs, including lightweight aggregate and admixtures. NRMCA also plans to calculate new regional averages for EPDs.

Through this initiative, NRMCA will reduce the carbon footprint of concrete by 50% by 2028 from 2014 levels and achieve carbon neutrality by 2045. The association will collaborate with various partners, including state ready mixed concrete associations, admixture suppliers, and academic institutions such as the Massachusetts Institute of Technology (MIT). The grant will also focus on supporting smaller companies in remote areas, promoting geographic diversity in EPD development, and ensuring equitable workforce

development by encouraging minority groups and women to become sustainability experts. This comprehensive approach seeks to advance the industry's overall sustainability, improve data accuracy for environmental impacts, and foster innovation in low-carbon concrete solutions.

National Stone, Sand & Gravel Association

- National
- Selected Funding Amount: $9,645,980

The National Sand and Gravel Association (NSSGA) will improve the data quality and disclosure of construction aggregates that are upstream materials for concrete and asphalt. The project includes updating PCRs, improving data collection and verification instruments, and providing training and education. By creating robust EPDs, the NSSGA will establish a comprehensive and accurate environmental impact profile for aggregates used nationwide. The initiative is in partnership with various organizations, including the American Center for Life Cycle Assessment (ACLCA), and numerous universities and state associations, emphasizing collaborative efforts to enhance data accuracy and sustainability practices.

The project will improve the precision of EPDs by developing a digital twin platform and other advanced data collection tools, which will facilitate better environmental performance assessments. NSSGA will develop and disseminate training programs and educational resources in collaboration with university transportation centers and industry experts. This approach fosters immediate improvements in data quality and environmental practices as well as encourages long-term industry-wide adoption of sustainable practices. By supporting a wide range of stakeholders, from large national entities to local producers, the NSSGA's initiative underscores a commitment to reducing the carbon footprint of construction materials while promoting cleaner and more efficient production processes.

Oklahoma State University

- New Hampshire, North Carolina, Puerto Rico, Alabama, Illinois, Oklahoma, Nevada, Oregon, Washingston, Hawaii, Puerto Rico and Guam
- Selected Funding Amount: $9,990,311

Oklahoma State University is leading the creation of the National Center for Sustainable Construction Materials to promote low carbon construction materials (LCCMs) and generate robust EPDs for materials such as asphalt, concrete, steel and their additives. In collaboration with 11 universities across the U.S., including the University of Illinois and University of North Carolina at Charlotte, the project will provide extensive training, create educational programs, and design tools and incentives for adopting LCCMs. It also focuses on benchmarking methods, identifying high-impact parameters beyond global warming

potential, and integrating EPDs into construction specifications. The Center's efforts include K–12 outreach and workforce development to nurture future professionals in sustainable construction.

Oklahoma State University's project will focus on (1) establishing a national center and EPD centers of excellence at other universities; (2) facilitating training for stakeholders such as engineers, owners, material suppliers and contractors; (3) facilitating the generation of EPDs; (4) establishing a benchmarking approach; (5) identifing high-impact parameters beyond GWP; (6) working with departments of transportation and Tribes to incorporate EPDs into specifications; and (7) performing K–12 outreach and workforce development programs.

Oldcastle Infrastructure, Inc.

- 42 states
- Selected Funding Amount: $4,000,000

Oldcastle Infrastructure, Inc.'s project will focus on developing and publishing 15,405 facility-specific EPDs for asphalt, aggregates, ready-mix concrete, precast concrete, dry mix cement, masonry products and hardscape products, as well as developing a workforce training program focused on EPD education and data collection. This project will be split across five tasks: facility selection, EPD training program implementation, data collection, EPD development/verification/publishing, and performance tracking/reporting. It includes 667 production sites across 42 states.

By disclosing and verifying this data through robust EPDs, Oldcastle will spur and meet market demand for low-carbon construction products. The comprehensive program, involving three CRH Americas business units, will utilize technical experts and consultants to ensure the EPD methods align with EPA criteria, thereby supporting sustainable procurement decisions and reducing embodied carbon in building materials.

Pioneer Millworks

- New York and Oregon/National
- Selected Funding Amount: $302,300

Pioneer Millworks plans to develop EPDs for reclaimed and sustainably harvested wood flooring and paneling manufactured in the U.S. and to quantify their environmental advantages over existing EPDs. A strong education plan will ensure that best practices and lessons learned are communicated both within and beyond the wood products industry to promote the expansion and use of these types of EPDs.

This initiative seeks to establish the environmental and marketing benefits of using more sustainable content and minimizing unhealthy chemicals in wood products. By leveraging their expertise in reclaimed and sustainable wood, Pioneer Millworks will set a new standard in the industry. This project will involve hiring a Sustainability Manager and collaborating with an LCA/EPD consultant to develop, verify and publish the EPDs. The education component includes webinars, presentations and articles to disseminate the knowledge gained, with the goal of helping other small firms benefit from this endeavor and drive industry-wide adoption of more robust EPDs.

Portland Cement Association

- National
- Selected Funding Amount: $2,457,063

Portland Cement Association's (PCA's) project will (1) provide technical assistance to help cement/supplementary cementitious materials (SCM) manufacturers develop facility-specific EPDs; (2) improve cement and slag cement industry average EPDs, and create new ones for coal ash and natural pozzolans; (3) support the development of a single cementitious materials PCR to replace several cement and SCM PCRs currently in use or development and (4) support the development and maintenance of an LCA and benchmarking tool for concrete mix design. The project will be led by PCA with support from key industry partners including the Slag Cement Association (SCA), the American Coal Ash Association (ACAA), and the Natural Pozzolan Association (NPA). Together, these organizations represent the cementitious material industry in the United States and can help reduce the embodied greenhouse gas emissions of concrete products.

The project will substantially increase the number of robust, facility-specific EPDs for cementitious materials, which are critical for reducing the carbon footprint of concrete. The PCA will provide pass-through grants to eligible manufacturers and offer training and on-call technical assistance to help them develop, verify, and publish EPDs. Additionally, the project will support the creation of industry-average EPDs for materials that currently lack them, such as coal ash and natural pozzolans. By developing a single, comprehensive PCR for all cementitious materials and maintaining an LCA and Benchmarking Tool for concrete mix design, the project will enhance data comparability and promote the use of lower-GWP cementitious materials.

Prestressed Concrete Institute

- National
- Selected Funding Amount: $9,975,000

This project focuses on updating the precast concrete Product Category Rule (PCR) and producing product-specific Environmental Product Declarations (EPDs) across three trade associations: the Precast/Prestressed Concrete Institute (PCI), the National Precast Concrete Association (NPCA) and the American Concrete Pipe Association (ACPA). It will entail updating the existing PCR, developing an EPD generator and providing training and support to member companies for producing EPDs. The project also allows for the creation of EPDs under the current PCR while an update is conducted.

The project will empower precast concrete manufacturers to develop and produce compliant EPDs, providing transparent and verifiable embodied carbon information to buyers and sellers of precast concrete. The project will partner with NPCA and ACPA to implement the Precast Concrete Carbon Reporting (PCCR) project, reducing embodied greenhouse gas emissions in line with the Inflation Reduction Act and EPA guidelines. By enhancing the PCR and developing a new EPD generator tool, the project will support over 500 manufacturers in producing more than 1,500 new or updated EPDs and ultimately positioning the U.S. precast concrete industry as a leader in embodied carbon reporting and disclosures.

Rochester Institute of Technology

- New York
- Selected Funding Amount: $1,298,635

The Rochester Institute of Technology's (RIT's) Golisano Institute for Sustainability intends to assist small construction material manufacturers who recapture "waste" to manufacture new materials and products. RIT will complete ISO-compliant LCAs using existing, modified or newly developed PCRs and facilitate EPD publication, then examine LCA results, assess improvement opportunities, and assist with implementation. RIT plans to review the process of conducting the LCAs and publishing the EPDs for any gaps or challenges. The project includes conducting a webinar for construction material manufacturers disseminating project results to industry practitioners, architects, builders, and other stakeholders, as well as submitting new upstream and downstream LCI data to the Federal LCA Commons.

RIT aims to enhance the environmental impact data related to the production of construction materials and products, specifically those utilizing post-consumer waste. By providing technical assistance and conducting comprehensive life cycle assessments, the initiative seeks to promote a more circular economy, reduce landfill waste, conserve natural resources, and lower embodied carbon. RIT will partner with small manufacturers, such as KLAW Industries LLC and Pioneer Millworks Inc., to develop and publish EPDs for products like cement, concrete and reclaimed wood. The project will also address

potential gaps in existing standards and processes, fostering greater adoption of sustainable materials across the construction industry.

Scrap Tire Research and Education Foundation

- Michigan/National
- Selected Funding Amount: $3,778,326

This project's goal is to develop EPDs for the tire recycling industry based on the development of a PCR for tire recycling. The Scrap Tire Research and Education Foundation will fill gaps for asphalt EPDs that use scrap tires in mix. By creating robust datasets and EPDs, this initiative aims to support the development of a comprehensive PCR for the tire recycling process. Ground Tire Rubber (GTR) from the tire recycling industry, used as a low-carbon modifier in asphalt mixtures, will play a central role. This project addresses a critical gap, as there are currently no robust LCIs for the tire recycling process, limiting EPD support for Rubber Modified Asphalt (RMA) mixtures. The project will fill these data gaps and complement the EPD program for asphalt mixtures.

In collaboration with the University of Missouri and Michigan Technological University, the project will gather extensive field performance data on RMA pavements and collect key material input properties for pavement design tools. This effort will quantify the performance and service life of rubber modified asphalts during the pavement use phase. The robust datasets generated will support the production of EPDs that cover various applications of GTR, including its use in asphalt pavements, roofing and molded construction products. The project is expected to significantly increase the use of GTR in asphalt mixtures, enhance pavement sustainability, and reduce greenhouse gas emissions associated with asphalt paving activities.

The Research Foundation for the State University of New York

- National
- Selected Funding Amount: $745,748

This project will develop a comprehensive framework and an adaptive tool for producing robust EPDs for salvaged and recovered building materials. The project will develop a core PCR for such materials, tools with integrated EPD templates, and a life cycle inventory. This project will also integrate methods with a range of impact categories beyond global warming potential, validate the tools using case studies and stakeholder feedback, and generate verifiable EPDs. This project seeks to share information on further recoverability and increase the likelihood of material reuse based on circular economy direction. The tool will encourage all reuse businesses to develop and use EPDs for communicating and incentivizing their materials.

The project will work closely with local and regional waste management companies, recyclers and recovered materials manufacturers. The project will also develop archetypes of different types of salvaged and recovered materials and investigate existing strategies to develop a comprehensive framework for producing EPDs. The tool will incorporate data from the U.S. EPA's Construction and Demolition Debris management datasets and local practices, ensuring it reflects regional specificities and local production practices. The project willestablish a standardized, industry-adaptable method for producing verifiable and robust EPDs by validating the tool with case studies and disseminating the findings through workshops and academic publications. The project will enhance the transparency and quality of environmental impact assessments and promote the reuse of materials, contributing to a more sustainable construction industry.

The University of Texas at Austin

- California, Texas, Florida and Pennsylvania
- Selected Funding Amount: $3,268,757

The University of Texas at Austin will develop supply chain emission data sets for three salvage product categories: dimensional lumber, commercial doors and waste plastic. Using these data sets, The University of Texas at Austin intends to develop PCRs for salvaged materials and establish a framework for robust EPDs for salvaged materials. The project also includes an open-source toolkit for computing the environmental impacts of salvaged construction products and materials.

Partnering with Urban Machine, re:3D, Doors Unhinged, The Reuse People and Florida A&M University, this project aims to develop robust product category rules (PCRs) for salvaged and remanufactured construction materials. The project seeks to quantify the greenhouse gas and air quality impacts associated with remanufacturing processes by conducting a comprehensive uncertainty assessment for materials such as dimensional lumber, commercial doors and 3D printed waste plastic. This data will help create transparent EPDs, enhancing confidence in the environmental benefits of using remanufactured materials over raw/virgin products. This project will contribute to reducing greenhouse gas emissions and to support a growing marketplace for sustainable construction materials.

Tile Council of North America

- National
- Selected Funding Amount: $2,156,021

TCNA represents over 99% of North American ceramic tile, tile mortar, tile grout and related installation products manufacturing. This project will provide technical assistance to

manufacturers, particularly small and disadvantaged ones, to develop product-specific EPDs. TCNA aims to produce more detailed and accurate environmental impact data by updating the existing flooring PCR and creating new criteria for different types of ceramic tiles. The development of a tile-specific software platform will streamline the delivery of valid EPD data, making it easier and more cost-effective for the market to access and use this information, thus promoting the selection of products with lower embodied greenhouse gas emissions.

The Tile Council of North America (TCNA) will expand the number of available industry-wide and product-specific EPDs for ceramic and cement-based tile grout and mortar, improve PCRs to better differentiate between different types of ceramic tile, and develop a tile-specific software platform that will streamline valid EPD delivery. This project will develop new and maintain current industry-wide EPDs and underlying LCAs for ceramic tile, ceramic tile mortar, ceramic tile grout, and related ceramic tile installation materials. The project will also update the PCR for flooring and create new PCR criteria for an expanded scope of ceramic tile products. This effort is critical as ceramic tile is among the top 15 common building materials in cradle-to-gate embodied carbon emissions in federal building projects.

University of Kentucky Research Foundation

- Kentucky, national
- Selected Funding Amount: $2,097,521

Univeristy of Kentucky's project will: (1) develop a digital platform for data collection and quality enhancement and (2) define the mechanism and workflow for data screening, verification and management. Fifteen projects from across the United States will act as a data source, with the intent to develop a blueprint for use throughout the construction industry.

This project will address critical data gaps in the construction industry, focusing on transport, construction, and use stages. The project will enhance data collection and quality by developing a robust digital platform, which will support more comprehensive and accurate data. The platform will integrate with existing open-source LCA software, optimizing environmental performance and serving as a reporting tool for these stages. This effort will also facilitate better decision-making in material selection and construction processes, contributing to broader sustainability goals.

In collaboration with industry stakeholders and guided by a technical advisory committee, the project will set a new standard for data-driven decision-making in the construction

industry and promoting the use of EPDs and LCAs to achieve optimal environmental outcomes.

University of Massachusetts Amherst

- Amherst, Massachusetts;Chicago, Illinois;Pittsburgh, Pennsylvania
- Selected Funding Amount: $6,371,426

This project will reduce the environmental impacts of domestic construction activity, steel production, and product manufacturing through increasing the quality, transparency, and geographic coverage of life cycle inventories and resultant EPDs representing steel products. The project will include the development of life cycle inventory and EPD generator tools that can automate production of steel product EPDs, create an EPD repository, and update the steel PCR. The University of Massachusetts Amherst will also provide educational resources to students and design, construction and steel industry professionals. This project seeks to identify deconstruction processes for existing structures, required tests for recovered materials, and required modifications and fabrication data to increase the use of salvaged steel products.

Project partners, including the American Iron and Steel Institute (AISI) and the American Institute of Steel Construction (AISC), will help to transform the EPD landscape of the domestic steel industry. It will improve access to EPD generation for a broader range of manufacturers and fabricators, particularly small businesses, and create a public-facing EPD repository for stakeholders to access high-quality data. Through extensive educational outreach, the initiative will help build a skilled workforce, promoting sustainable practices and setting a new standard for steel product EPDs.

University of Mississippi

- Mississippi
- Selected Funding Amount: $749,476

This project will focus on investigating the potential reduction of embodied greenhouse gas emissions by implementing warm mix asphalt (WMA) technologies that integrate reclaimed asphalt pavement. To achieve this goal, the University of Mississippi will assess the effects of WMA technologies on greenhouse gas emissions through life cycle assessment and life cycle impact assessment. Additionally, the research will entail an evaluation of the mechanical properties and durability characteristics of asphalt mixtures through a comprehensive experimental program. This approach will enable the development of balanced mix design criteria using three-dimensional performance interaction diagrams. Furthermore, the research will incorporate a multi-objective optimization technique and

machine learning techniques to optimize the design of asphalt mixtures while considering cost, carbon dioxide emissions and energy consumption.

The University of Mississippi will collaborate with various stakeholders to advance this project, including state transportation agencies, technical assistance providers, private businesses, local communities, trade associations and nonprofit organizations. This collaborative effort will ensure that the project's findings and innovations can be widely adopted and implemented. By integrating environmental and mechanical evaluations with advanced optimization techniques, this research willl identify sustainable, durable and cost-effective asphalt mixtures to help reduce greenhouse gas emissions.

University of Washington

- National
- Selected Funding Amount: $9,990,668

This project will further develop EPDs in the marketplace and increase the number of professionals skilled in life cycle assessment (LCA). The initiative, Validating and Expanding Research and Education for LCA Policy (VERE-LCA), addresses two primary challenges in the construction industry — the underdevelopment of EPDs and the scarcity of skilled LCA professionals. The project will improve the robustness of EPD data and methods while simultaneously advancing LCA education for students and professionals. By focusing on these areas, the project will enhance the building and construction industry's ability to effectively comply with procurement-oriented environmental policies.

VERE-LCA is a collaborative effort involving the University of Washington, Howard University, the University of California, Berkeley and the Pacific Northwest National Laboratory. Each institution contributes its expertise to the project, with UW focusing on building-sector LCA policies and education, HU on environmental justice and education, PNNL on primary LCA research, and UCB on building-sector LCA practices. The project will develop open-source digital resources and an open-access LCA curriculum, pilot these in various educational settings, and disseminate findings through peer-reviewed publications and open-access platforms. This comprehensive approach will create a scalable impact, equipping more professionals with the necessary skills to implement effective environmental policies and produce robust EPDs.

West Virginia University Research Corporation

- West Virginia
- Selected Funding Amount: $2,486,224

The West Virginia University will provide technical assistance to West Virginia construction material manufacturers in developing EPDs under new and updated PCRs. This project will include onsite technical assistance, training and workshops. Specifically, the project will support businesses in West Virginia and neighboring states to create robust EPDs through comprehensive life cycle assessments, with a focus on small businesses in rural and disadvantaged communities. The initiative will include industry-targeted outreach, database enhancement, on-site and off-site technical assistance, training workshops, webinars and community outreach. This multi-faceted approach is designed to lower emissions of hazardous and other locally impacting pollutants, thereby improving air quality and public health.

The project will leverage existing networks and partnerships with organizations like the West Virginia Manufacturing Extension Partnership and the West Virginia Office of Economic Development. It will develop a baseline database of construction material manufacturers, distribute draft EPDs and guidance documents, and provide personalized on-site technical assistance through planned visits. Additionally, the project will engage businesses through conferences and create a public domain EPD sharing platform to make the knowledge and EPDs accessible to all. By helping businesses develop and verify EPDs, the project will enhance their competitiveness in supplying federal and institutional construction projects, thereby fostering economic growth and job creation.

List of Selectees by EPA Region

Region 1

- GO LAB Inc. - **ME**
- HOLCIM US, Inc. - AL/CO/IL/**MA**/MD/MI/MO/NJ/NV/NY/OH/OK/PA/SC/TX/UT
- University of Massachusetts Amherst – IL/**MA**/PA
- Oklahoma State University - AL/HI/IL/MD/NC/**NH**/NV/OK/OR/PR/WA

Region 2

- Pioneer Millworks - **NY**/OR
- Cornell University - CA/**NY**
- HOLCIM US, Inc. - AL/CO/IL/MA/MD/MI/MO/**NJ**/NV/**NY**/OH/OK/PA/SC/TX/UT
- Rochester Institute of Technology - **NY**
- Heidelberg Materials US, Inc. – IN/**NY**/OR/PA/TX/WA
- Oklahoma State University - AL/HI/IL/MD/NC/NH/NV/OK/OR/**PR**/WA

Region 3

- The University of Texas at Austin - CA/FL/**PA**/TX
- Knauf Insulation, Inc. - AL/CA/IN/MI/TX/**WV**
- HOLCIM US, Inc. - AL/CO/IL/MA/**MD**/MI/MO/NJ/NV/NY/OH/OK/**PA**/SC/TX/UT
- West Virginia University Research Corporation - **WV**
- Heidelberg Materials US, Inc. – IN/NY/OR/**PA**/TX/WA
- University of Massachusetts Amherst – IL/MA/**PA**
- Hemp Building Institute - AL/CA/**MD**/TN
- Oklahoma State University - AL/HI/IL/**MD**/NC/NH/NV/OK/OR/PR/WA

Region 4

- Belter Tech Inc. - **GA**
- University of Mississippi - **MS**
- The University of Texas at Austin - CA/**FL**/PA/TX
- Knauf Insulation, Inc. - **AL**/CA/IN/MI/TX/WV
- HOLCIM US, Inc. - **AL**/CO/IL/MA/MD/MI/MO/NJ/NV/NY/OH/OK/PA/**SC**/TX/UT
- Hemp Building Institute - **AL**/CA/MD/**TN**
- Oklahoma State University - **AL**/HI/IL/MD/**NC**/NH/NV/OK/OR/PR/WA

Region 5

- Evanston Rebuilding Warehouse - **IL**
- Knauf Insulation, Inc. - AL/CA/**IN**/**MI**/TX/WV
- HOLCIM US, Inc. - AL/CO/**IL**/MA/MD/**MI**/MO/NJ/NV/NY/OH/OK/PA/SC/TX/UT
- Heidelberg Materials US, Inc. – **IN**/NY/OR/PA/TX/WA

- University of Massachusetts Amherst – **IL**/MA/PA
- Oklahoma State University - AL/HI/**IL**/MD/NC/NH/NV/OK/OR/PR/WA

Region 6

- The University of Texas at Austin - CA/FL/PA/**TX**
- Knauf Insulation, Inc. - AL/CA/IN/MI/**TX**/WV
- HOLCIM US, Inc. - AL/CO/IL/MA/MD/MI/MO/NJ/NV/NY/OH/**OK**/PA/SC/**TX**/UT
- Heidelberg Materials US, Inc. – IN/NY/OR/PA/**TX**/WA
- Oklahoma State University - AL/HI/IL/MD/NC/NH/NV/**OK**/OR/PR/WA

Region 7

- HOLCIM US, Inc. - AL/CO/IL/MA/MD/MI/**MO**/NJ/NV/NY/OH/OK/PA/SC/TX/UT

Region 8

- HOLCIM US, Inc. - AL/CO/IL/MA/MD/MI/MO/NJ/NV/NY/OH/OK/PA/SC/TX/**UT**

Region 9

- The University of Texas at Austin - **CA**/FL/PA/TX
- Cornell University - **CA**/NY
- Knauf Insulation, Inc. - AL/**CA**/IN/MI/TX/WV
- HOLCIM US, Inc. - AL/CO/IL/MA/MD/MI/MO/NJ/**NV**/NY/OH/OK/PA/SC/TX/UT
- Hemp Building Institute - AL/**CA**/MD/TN
- Oklahoma State University - AL/**HI**/IL/MD/NC/NH/NV/OK/OR/PR/WA

Region 10

- Pioneer Millworks - NY/**OR**
- International Code Council - **OR/WA**
- Heidelberg Materials US, Inc. – IN/NY/**OR**/PA/TX/**WA**

National

- The Research Foundation for the State University of New York – National
- Atlas Roofing Corporation - 18 states
- Aluminum Extruders Council – National
- Global Bamboo Technologies, Inc. – National
- EIFS Industry Members Association – National
- Massachusetts Institute of Technology - Various regions
- International Living Future Institute – National
- Tile Council of North America - National
- Tire Research and Education Foundation – National
- University of Kentucky Research Foundation – National

- National Glass Association – National
- Portland Cement Association – National
- Oldcastle Infrastructure Inc. - 42 states
- Prestressed Concrete Institute – National
- American Center for Life Cycle Assessment – National
- Building Materials Re-Use Association - National
- National Ready-Mixed Concrete Association - National
- University of Washington - National
- Collaborative Composite Solutions Corporation - National
- National Asphalt Pavement Association - National
- National Stone, Sand & Gravel Association – National
- American Wood Council - National