GreenPlum Street LLC

USCA Project (C-20435) Maryland Buy Clean Technical Assistance Stakeholder Workshop 1 (virtual)

GreenPlum Street LLC
September 16, 2024

Meeting Summary for DGS Buy Clean Maryland Workshop 1

Overview

Tien Peng and Nora Daley-Peng from Green Plum Street LLC hosted the workshop for Maryland Department of General Services. Tien discussed the Clean Maryland Act, the Maryland Green Building Council's role, and the importance of considering the whole life cycle impacts of materials in construction. He also introduced the concept of life cycle assessments, the carbon impact of various construction materials, and the growing demand for carbon neutrality from the private sector. Lastly, he discussed the importance of understanding regional differences in average global warming potential for concrete and the initiatives by different states and the federal government to set limits on GWP for concrete and other materials. Matthew Lemay from the National Ready Mixed Concrete Association (NRMCA) discussed the process to develop an environmental product declaration (EPD) and forthcoming EPA grant funding. The workshop included a breakout session where participants considered comparability of cements, concrete EPDs and a prescriptive specification review.

Schedule/Actions

- Department of General Services (DGS) to create guidelines and reporting forms for project bids related to Buy Clean Maryland Act.
- Concrete producers to begin preparing to submit EPDs by December 31, 2024 deadline.
- Green Plum Street LLC to assist cement and concrete producers in developing EPDs.
- DGS to analyze submitted EPDs and assess global warming potential of eligible materials.
- DGS to establish maximum acceptable global warming potential for each eligible material category by 2026.
- DGS to submit annual report on Buy Clean Maryland Act implementation starting December 1, 2025.
- National Ready Mixed Concrete Association (NRMCA) to finalize and roll out EPA grant application process for EPD rebates between December 2024-April 2025.
- NRMCA to administer EPA grant funding to support EPD production over next 5 years.
- Concrete producers to consider applying for EPA grant funding to offset costs of producing EPDs. NRMCA membership not required.

Summary

Opening remarks by Steve Lauria, Chief of Design, Department of General Services.

The Buy Clean Maryland Act 2023
Tien from Green Plum Street LLC, a decarbonization consultancy funded by the US Climate Alliance, discussed the details of the Buy Clean Maryland Act. The Act requires construction material producers to submit environmental product declarations by December 2024. The Department of General Services will analyze these declarations and, in consultation with the Department of Transportation, establish maximum global warming potential limits for each material category by 2026. Tien also mentioned the

department's plan to base the maximum acceptable global potential on the industry average of emissions and establish additional subcategories and maximum acceptable global warming potential for each material category. The department will require successful bidders for eligible projects to submit a facility-specific Environmental Product Declaration (EPD) for each material or a similarly robust lifecycle assessment method.

The scope of the Act is limited to projects under the Maryland High-Performance Green Building Program. Stuart Kaplaw, chair of the Maryland Green Building Council expressed excitement about the inclusion of cement and concrete products in the high performance green building program and the expansion of the Council's work.

Tien also discussed the Environmental Product Declaration Assistance Fund.

Disclosure Tools

Tien emphasized the need for innovation to reduce greenhouse gas emissions and highlighted the significant contribution of embodied carbon in building materials and construction. He discussed the importance of considering the whole life cycle impacts of materials, rather than just individual attributes. He introduced the concept of life cycle assessments, which is a compilation and evaluation of the inputs and outputs, and potential environmental impacts of a product system throughout its life cycle. Tien also discussed the carbon impact of various construction materials, including steel, concrete, and wood, and highlighted that the majority of the carbon footprint of concrete comes from the manufacturing of clinker at cement plants. He mentioned that the concrete industry has set milestones to reduce their carbon impact, with the National Ready Mix Concrete Association aiming for a 50% reduction by 2030 and net zero embodied carbon by 2050. Tien also explained that an Environmental Product Declaration (EPD) is a document based on a product life cycle assessment, which considers various stages of a product's life cycle and their impacts on global warming, ozone depletion, acidification, eutrophication, photochemical smog creation, and resource consumption.

Tien discussed the growing demand for carbon neutrality from the private sector, particularly from tech industries and universities. He highlighted the use of proxies like green building rating systems and life cycle assessments for disclosure, and mentioned the development of industry-wide EPDs and benchmarks by NRMCA. Tien also noted the progress in reducing embodied carbon in building design, with architects and structural engineers committing to achieve net zero by 2050. He emphasized the importance of whole building life cycle analysis for a comprehensive understanding of a project's carbon footprint. Tien also discussed the increasing adoption of climate-conscious building codes and standards, such as the CalGreen code and the ASHRAE 189.1 standard. He concluded by mentioning specific initiatives in Maryland, Washington State, New York, Colorado, California and Minnesota, including the Buy Clean Buy Fair laws that require data collection and supplier code of conduct. Tien discussed the importance of understanding regional differences in average global warming potential (GWP) for concrete before setting GWP limits. He also highlighted the federal government initiative to set limits on GWP for concrete and other materials.

EPD Creation and Verification

Matthew from the National Ready Mix Concrete Association (NRMCA) then took over the presentation, explaining NRMCA's role as an EPD program operator, facilitating the verification and publishing of EPDs. He also discussed the use of EPD generator software and the role of third-party verifiers in the process. Lastly, he detailed the process of creating an Environmental Product Declaration (EPD) for a ready mix concrete producer, emphasizing the importance of primary data from suppliers' EPDs on materials and plant data like electricity, water, fuel consumption, and waste over 12 months. Matthew discussed the process of verifying plant locations in the context of Environmental Product Declarations (EPDs) for concrete mixes. He explained that a verification covers all suppliers and processes of a plant, and that

errors in EPDs are common. He also mentioned that once a plant is verified, it can produce pre-verified EPDs for all its mixes, as long as no new materials are introduced. Matthew further discussed the cost and time involved in verifying a plant using the EPD generator software, and NRMCA's verification fees. He also explained the process of publishing and verifying EPDs on the NRMCA website. Lastly, he discussed the cost implications of setting up EPDs for concrete production and the EPA grant for ready mix concrete producers, which aims to reduce the carbon footprint of concrete production.

Tabletop Breakout Sessions

Tien led a meeting where participants were assigned to breakout rooms for specific tasks related to cement and concrete comparisons as well as a specifications review. The participants were then invited to join their respective rooms. The conversation ended with Tien preparing to share some final information before ending the session. The team discussed the differences in specifications and conflicts within prescriptive specifications. Tien emphasized the importance of specifications and guidelines for low-carbon concrete production.

Conclusion

The team agreed to host two more sessions (at least one live) and to share the presentation and recording.