



Buy Clean California Act Obstacles and Effectiveness Report

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Executive Summary

The Buy Clean California Act ([Public Contract Code § 3500-3505](#)) went into effect on July 1, 2022. It targets carbon emissions associated with the manufacturing of four eligible materials: structural steel, concrete reinforcing steel, flat glass, and mineral wool board insulation.

This report, due by July 1, 2023, was developed by the Department of General Services (DGS) to provide the Legislature with feedback on the obstacles to implementation and effectiveness of the Buy Clean California Act (BCCA) to reduce Global Warming Potential (GWP).

State agencies and universities (awarding authorities) responsible for the administration of the BCCA were asked to provide data on eligible projects as well as their experience in implementing the statute. DGS also provided relevant information based on its experience with the program.

Key takeaways from this report are:

- Due to the lack of availability of facility-specific Environmental Product Declarations (EPDs), DGS used industrywide EPDs to set the initial GWP targets, however facility-specific EPDs are still required on eligible projects. The development of facility-specific EPDs is occurring but growing slowly.
- Due to its implementation infancy, there is a minimal amount of information available to assess the BCCA's effectiveness to reduce GWP.
- The description of eligible material categories could be statutorily broadened to allow some flexibility for DGS and the awarding authorities to target the appropriate product.
- The use of industrywide EPDs may be required again to evaluate the GWP limit in 2025 if the availability of facility-specific EPDs remains low.

Reason for the Report

Public Contract Code (PCC) Section 3505 requires DGS to submit a report to the Legislature by July 1, 2023, on any obstacles to the implementation and effectiveness of the BCCA in reducing GWP within the first year of full program implementation. The report will be made available on the DGS Legislative Reports [webpage](#).

Background

The BCCA was introduced as Assembly Bill (AB) 262 (Bonta, Chapter 816, Statutes of 2017). It addressed the greenhouse gases associated with the production of construction products used in California state public works projects. According to the author, the bill was meant to “level the playing field” and benefit those manufacturers who have made a conscious effort to lower greenhouse gas emissions in the production of materials. The bill was signed into law by Governor Edmund G. Brown Jr. on October 15, 2017. The BCCA was subsequently amended by AB 1817 (Ting, Chapter 37, Statutes of 2018) and AB 137 (Ting, Chapter 77, Statutes of 2021).

The BCCA is part of California's overall strategy to address climate change. By leveraging the state's purchasing power, the BCCA strives to lower the GWP of construction materials over time by targeting carbon emissions associated with the manufacturing of four eligible materials: structural steel, concrete reinforcing steel, flat glass, and mineral wool board insulation. Awarding authorities are responsible for ensuring that these materials, when used in public works projects, do not have a GWP that exceeds the limit set by DGS. The document used to establish the GWP limit and determine compliance is the EPD.

Awarding authorities include the Department of Transportation, Department of Water Resources, Department of Parks and Recreation, Department of Corrections and Rehabilitation, Military Department, Department of General Services, High Speed Rail Authority, Regents of the University of California, Trustees of the California State University, and state agencies granted authority to administer public works projects under DGS Management Memo 18-01.

Study Methodology

The information contained in this report originated from the awarding authorities and DGS. Data was collected from July 1, 2022 through March 1, 2023.

Findings

The findings in this report are broken down into two sections: 1) Obstacles to implementation, and 2) Effectiveness to reduce GWP.

Obstacles to implementation

Awareness of BCCA and EPDs

Although the BCCA was signed into law in 2017 and amended to include a two-year phase-in period introducing stakeholders to EPDs and BCCA requirements, a steep learning curve still exists for stakeholders to understand how to comply with the program. At a high level, stakeholders are aware

that an EPD is required for the BCCA. However, to determine if a particular EPD is compliant with the BCCA, stakeholders must understand technical terms such as product category rule (PCR), GWP, and information modules and must be able to distinguish between industrywide and facility-specific EPD types. EPDs are technical documents that require training and time to understand the information necessary to verify compliance.

Since BCCA enactment, DGS and awarding authorities have held outreach events and created dedicated webpages and policies. Despite these efforts to provide information on the BCCA, there continues to be challenges with implementation. For example, when responding to awarding authority document requests, stakeholders submitted incorrect EPDs (industrywide vs. facility-specific), used inconsistent EPD terminology, and exhibited difficulty in identifying the correct GWP for compliance. Until the learning curve subsides, awarding authorities will have to spend more time educating stakeholders to mitigate the risk of non-compliant submissions.

Facility-specific EPD availability

The BCCA requires the use of facility-specific EPDs for compliance on eligible projects, which was a new concept. DGS interpreted this as a product EPD in which the environmental impacts are disclosed for a single manufacturer and single manufacturing facility. Prior to the BCCA, the industry was familiar with and developed standard product EPDs. These EPDs are typically from a single manufacturer and include the production weighted GWP of multiple manufacturing facilities for a product. Further, to establish the maximum GWP, DGS used industrywide EPDs as allowed by the statute, however their usage does not apply to eligible project compliance.

Although it has been over 5 years since the introduction of the BCCA, there are still very few facility-specific EPDs published as shown in Table 1. The exact reasons for this are unknown, but factors such as the additional cost, confidentiality concerns, or emerging buy clean initiatives from the Federal Government and other states might be preventing the development of the required EPDs.

Until the availability of facility-specific EPDs increases, the sources of materials desired by stakeholders will be limited and awarding authorities may be forced to exempt a project or material from complying with the BCCA.

Table 1: Number of facility-specific EPDs available at the time of this report

Eligible material	Number of facility-specific EPDs available ¹	Number of unique manufacturers represented in EPD(s)	Number of manufacturing facilities represented in EPD(s)	Number of manufacturing facilities compliant with GWP limit ²
Structural steel: Hot-rolled sections	5	3	6	5 out of 6
Structural steel: Hollow structural sections	7	5	22	14 out of 22
Structural steel: Plate	3	3	5	5 out of 5
Concrete reinforcing steel	11	6	25	24 out of 25
Flat glass	1	1	5	4 out of 5
Mineral wool board insulation	1	1	2	2 out of 2

¹ EPDs developed according to the most current PCRs and found in the [Building Transparency Embodied Carbon in Construction Calculator](#) (EC3).

² A single EPD can disclose facility-specific GWP for more than one manufacturing location. However, not all facilities may be compliant with the GWP limit. This column shows the number of compliant facilities out of the total number facilities reported in the EPDs.

Effectiveness to reduce GWP

Awarded projects

The BCCA applies to public works contracts awarded on or after July 1, 2022 that use eligible materials. The statute, however, allows awarding authorities to exempt projects from the BCCA under certain conditions. Awarding authorities who developed minimum project requirements for BCCA eligibility are summarized in Table 2. Projects that don't meet these minimum requirements will not be subject to the BCCA.

Table 2: Minimum project requirements for BCCA eligibility

Awarding authority ¹	Minimum project cost	Minimum project duration	Minimum material usage
Department of Transportation²	> \$1M	≥ 175 working days	Structural steel: ≥ 5,000 pounds Concrete reinforcing steel: ≥ 20,000 pounds Flat glass: ≥ 2,000 square feet Mineral wool board insulation: ≥ 4,000 square feet
University of California	≥ \$1M		
Department of Water Resources		≥ 175 working days	
California State University	> \$10M		
DGS (Real Estate Services Division)	Major capital outlay projects		

¹ BCCA policies can be found by clicking on the awarding authority's hyperlink. The Department of Parks and Recreation, Military Department, High-Speed Rail Authority, and the Department of Corrections and Rehabilitation have not identified additional requirements for project eligibility.

² For the Department of Transportation, the project under consideration must meet both minimum cost and duration.

Awarding authorities provided DGS with eligible project information between July 1, 2022 and March 1, 2023. As shown in Table 3, a total of 14 projects were subject to the BCCA. Only three awarding authorities were able to provide estimates of the amount of structural steel and concrete reinforcing steel planned for the projects. There were no reports of mineral wool board insulation or flat glass used.

The reader is cautioned against making any conclusions from the information collected to date. Projects are still in their early phases, and it is still to be determined if issues will arise.

Table 3: BCCA eligible projects between July 1, 2022 and March 1, 2023.

Awarding authority	BCCA projects awarded or pending award	Estimated quantity of structural steel	Estimated quantity of concrete reinforcing steel	Estimated quantity of mineral wool board insulation	Estimated quantity of flat glass
Department of Transportation	3	13.8 tons	301.4 tons	0	0
Department of Parks and Recreation	5	0.5 tons	7.7 tons	0	0
University of California	1	15 tons	0.25 tons	0	0
Department of Water Resources	1	TBD ¹	TBD ¹	TBD ¹	TBD ¹
California State University	4	TBD ¹	TBD ¹	TBD ¹	TBD ¹
DGS (Real Estate Services Division)	0	0	0	0	0
Military Department	0	0	0	0	0

Awarding authority	BCCA projects awarded or pending award	Estimated quantity of structural steel	Estimated quantity of concrete reinforcing steel	Estimated quantity of mineral wool board insulation	Estimated quantity of flat glass
High-Speed Rail Authority	0	0	0	0	0
Department of Corrections and Rehabilitation	*	*	*	*	*
Total	14	29.3 tons	309.35 tons	0	0

¹ Project pending award.

* Awarding authority did not report to DGS.

Flat glass

The BCCA specifies flat glass, which is defined as float or rolled glass that is clear or tinted, as an eligible material. However, upon surveying the awarding authorities, it was determined that processed glass is typically used in public works projects rather than flat glass. Processed glass is flat glass that goes through additional processing (e.g., tempering, coating, or laminating) and has a separate PCR from flat glass that is used for EPD development.

To comply with the statute, a GWP limit was only established for flat glass since processed glass is not a covered material. Broadening the language for the glass category and including downstream products (e.g., processed glass) would give DGS and awarding authorities flexibility to target the most appropriate product. An example of this broader language is the description of purchase categories from the U.S. Environmental Protection Agency’s 2022 [Interim Determination memo](#) for the Inflation Reduction Act.

GWP limit

The BCCA requires DGS to set the maximum acceptable GWP at the industry average of facility-specific GWP emissions for eligible materials. Setting limits at industry averages may hinder the rate of GWP improvement, as these averages

represent current technology solutions. Incentivizing industry to meet more ambitious GWP limits may accelerate the rate of GWP improvement.

DGS is responsible for re-evaluating the GWP limits every three years from the date they were initially established. PCRs and EPDs that are used to determine the limit are updated every five years. If the quantity of facility-specific EPDs remain low at the time of re-evaluation (January 1, 2025), DGS may have to rely on industrywide EPDs again to obtain the average GWP limit. Since the structural steel industrywide EPDs used to establish the GWP limits on January 1, 2022 will still be valid on January 1, 2025, the GWP limits would stay the same through January 1, 2028.

Any stagnation of GWP limits would negatively impact the BCCA's ability to influence industry improvements. The BCCA allows awarding authorities to specify a GWP lower than the limit set by DGS but does not prescribe the method. Awarding authorities could consider reducing the limit that aligns with California's broader greenhouse gas reduction goals.

Conclusion

The information provided in this report is intended to provide the Legislature insight into the obstacles to implementation and effectiveness of the BCCA to reduce GWP. Despite the limited data available, there are key takeaways from this report for the Legislature:

- Due to the lack of availability of facility-specific EPDs, DGS used industrywide EPDs to set the initial GWP targets, however facility-specific EPDs are still required on eligible projects. The development of facility-specific EPDs is occurring but growing slowly.
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Glossary

Eligible material

These are the original four materials subject to the BCCA: structural steel, concrete reinforcing steel, flat glass, and mineral wool board insulation.

Environmental product declaration

An EPD is an independently verified and registered document that reports a product's environmental impact over its life cycle.

Global warming potential

Greenhouse gases (GHGs) are those that trap heat in the earth's atmosphere. Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) are types of GHGs. While all GHGs have the effect of trapping heat, each gas has a different amount of impact over its lifetime. The BCCA GWP limits are based on a 100-year lifetime. The various GHGs produced when manufacturing a product, for example, can be represented by an equivalent amount of carbon dioxide associated with the warming effect of a given quantity of a GHG. This amount is known as global warming potential and is expressed as CO₂ eq.

Industrywide EPD

Industrywide EPDs typically represent a group of manufacturers and facilities in a geographic region. GWP results are often production-weighted among the manufacturers.

Information modules

Information modules in an EPD are where environmental impacts are reported for a particular life cycle stage.

Product category rule

A PCR is a set of rules, requirements and guidelines used to develop an EPD for a product group.