SENATE DOCKET, NO. 2444 FILED ON: 1/17/2025

SENATE . . . . . No.

The Commonwealth of Massachusetts

PRESENTED BY:

William J. Driscoll

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act relating to embodied carbon emission reductions in state-funded projects.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
William J. Driscoll	*Norfolk, Plymouth and Bristol*

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SENATE . . . . . No.

[Pin Slip]

The Commonwealth of Massachusetts

In the One Hundred and Ninety-Fourth General Court
(2025-2026)

An Act relating to embodied carbon emission reductions in state-funded projects.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Chapter 7C of the Massachusetts General Laws, as appearing in the 2020 Official Edition 2 is hereby amended by adding the following section: -

Section 73. (a) For the purposes of this section, the following terms shall have the following meanings unless the context clearly requires otherwise:

"Awarding authority" (i) a state agency for a contract for a public works project as defined in Section 44A of chapter 149 of the Massachusetts General laws; (ii) Institutions of higher education; (iii) Natural resource agencies, including the department of conservation and recreation, and the department of environmental protection; (iv) other state entities that receive funding from any state, general, supplemental or capital appropriations for a public works project contracted directly by the state agency; and (v) The department of transportation.

"Covered product" (i) Structural concrete products, specifically ready mix, shotcrete, precast, and concrete masonry units; (ii) Reinforcing steel products, specifically rebar and post tensioning tendons; (iii) Structural steel products, specifically hot rolled sections, hollow

sections, plate, and metal deck; and (iv) Engineered wood products including mass timber products such as laminated veneer lumber, parallel strand lumber, cross-laminated timber, dowel laminated timber, nail laminated timber, glulam laminated timber, glulam beams and columns, and structural sawn lumber.

"Cradle-to-gate", activities associated with a product or building's life cycle from the extraction stage through production stage, and covering modules A1 through A3 in accordance with ISO Standards 14025 and 21930.

"Cradle-to-grave", activities associated with a product or building's life cycle from the extraction stage through disposal stage, and covering modules A1 through C4 in accordance with ISO Standards 14025 and 21930.

"Construction contractor", the business entity, a general contractor or joint venture contractor, holding the prime contract with the governmental entity to construct the eligible project.

"Department", the division of capital asset management and maintenance.

"Designer of record", licensed design professional, who is responsible for leading the design team, who shall oversee and manage the design, specification, or both, of the eligible products.

"Eligible project", a construction project larger than 50,000 gross square feet of space as defined in the state building code; or a building renovation project with a greater than 50 percent of the assessed value and the project is larger than 20,000 gross square feet of occupied or conditioned space as defined in the state building code.

"Embodied carbon", greenhouse gas emissions from the harvesting, extracting, manufacturing, transportation, installation, maintenance, replacement, and disposal of eligible products.

"Environmental product declaration", a type III environmental product declaration, as defined by the ISO 14025. Other equally robust life-cycle assessment methods and metrics that have uniform standards in data collection consistent with the ISO 14025, industry acceptance, and integrity may also be used. For consistency in the required calculations, only the impacts from life-cycle stages A1 through A3, also referred to as "cradle-to-gate," may be included.

“Global warming potential”, a numeric value that measures the total contribution to global warming from the emission of greenhouse gases, or the elimination of greenhouse gas sinks.

"Greenhouse gas" as defined in Chapter 298 of the acts of 2008.

“LCA Commons”, federally managed LCA Commons, an interagency community of practice for Life Cycle Assessment (LCA) research methods. This community of practice collaborates to share expertise and methods to move toward common Federal data modeling conventions and make Federal data sets freely available through a web-based data repository.

"Responsible bidder”, the eligible product supplier, the subcontractor that manufactures or provides for installation, or both, of the eligible product.

“Whole Building Life Cycle Assessment”, a cradle-to-gate whole building life cycle assessment performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, that can be compared to a reference baseline building. The reference building shall be of

the same size, geographic location, and thermal performance as the proposed building, and shall be functionally equivalent per ASTM E2921-22.

SECTION 2. On or before the date one year following enactment, the department shall promulgate rules that will result in embodied carbon reductions of at least 30% in eligible projects. The rules must establish that an awarding authority shall include in a specification for bids for an eligible project that the responsible bidder will comply with one of the following embodied carbon reduction compliance pathways to achieve the reduction in embodied carbon emissions:

(a) Performance pathway: comparative whole building life cycle assessment at design:

(i). projects shall conduct a cradle-to-grave whole building life cycle assessment performed in accordance with ISO 14040 and ISO 14044, excluding operating energy, and demonstrating a minimum 30 percent reduction in global warming potential (GWP) as compared to a reference baseline building from the LCA commons and/or database established in SECTION (3). The reference baseline building shall be of the same size, geographic location, and thermal performance as the proposed building, and shall be functionally equivalent per ASTM E2921-22. The products and product quantities in the proposed building and the reference building are permitted to vary;

(ii). software used to conduct the whole building life cycle assessment, including reference baseline building, shall have a data set compliant with ISO-14044, and ISO 21930 and the software shall conform to ISO 21931. The software tools and datasets shall be the same for evaluation of both the baseline building and the proposed building;

(b) Re-use pathway: building re-use wherein at least 45% of the existing structure is maintained.

(i). An alteration or addition to an existing building shall maintain at a minimum 45 percent combined of the existing building's primary structural elements (foundations; columns, beams, walls, and floors; and lateral elements) and existing building enclosure (roof framing, wall framing and exterior finishes). Window assemblies, insulation, portions of buildings deemed structurally unsound or hazardous, and hazardous materials that are remediated as part of the project shall not be included in the calculation;

(c) Prescriptive pathway: Comparison of Type III Environmental Product Declarations at procurement. Each product that is permanently installed and listed as a covered product shall have a Type III environmental product declaration (EPD). Eligible projects shall demonstrate that the project's embodied carbon, averaged across 90 percent of covered products, is lower than industry average by 30%. To achieve this reduction, eligible projects must use project-specific material quantities and environmental product declarations to demonstrate that the products specified in contract documents have a lower global warming potential than the industry average as defined by the United States environmental protection agency by 30%, industry-wide environmental product declarations applicable to the product, or as established by an appropriate state agency.

(d) Verification of compliance with a pathway will be confirmed with the department and awarding authority through the following methods:

(i) For the performance pathway, a summary of the GWP analysis produced by the software and signed by the design professional of record shall be provided in the construction documents as documentation of compliance;

(ii) For the building reuse pathway, documentation shall be provided in the construction documents and signed by the design professional of record to demonstrate compliance;

(iii) For the prescriptive pathway, calculations to demonstrate compliance, Type III EPDs for products required to comply if included in the project, and signature of the design professional of record shall be provided on the construction documents. Updated EPDs for products used in construction shall be provided to the owner at the close of construction and to the department or awarding authority upon request. The department may require inspection during and at completion of construction to demonstrate substantial conformance. Inspection shall be performed by the design professional of record or third party acceptable to the enforcing agency.

(e) Data collected through any of the three compliance pathways described under subsections (a-c) of this section must be consistently transferred by the department or awarding authority to the federal LCA Commons and/or database established by the department in Section 3. The project details will be anonymized, except for each eligible project's global warming potential.

(f) The Department will conduct biennial reviews, starting 2 years after the rules promulgated pursuant to Section 2 are finalized, to determine further reduction goals over time, consistent with the intent of achieving net zero emissions by 2050, and will accordingly establish

by rules increased embodied carbon emission reduction targets across all three pathways. In these reviews, the department may also consider adding additional compliance pathways.

SECTION 3. On or before the date one year following enactment, the department shall establish a database of representative Whole Building Life Cycle Assessments and/or elect to rely on the federally managed LCA Commons, reflecting an appropriate range of size, function, location, and occupancy conditions. This database and/or the LCA Commons, will be used to identify baseline buildings to evaluate improvements on global warming potential for covered projects.