



103RD GENERAL ASSEMBLY

State of Illinois

2023 and 2024

HB5461

Introduced 2/9/2024, by Rep. Daniel Didech

SYNOPSIS AS INTRODUCED:

New Act
35 ILCS 5/241 new

Creates the Concrete Carbon Utilization, Reduction, and Removal Breakthrough Act. Establishes a performance-based tax credit for concrete producers to incentivize the use of materials and methods for State-funded projects that reduce the embodied carbon generated in the production of concrete, and support the removal of carbon in the atmosphere and its permanent storage in concrete. Establishes a tax credit for concrete producers to defray the cost of implementing environmental product declaration technology at plants. Requires the implementation of performance-based specification standards for concrete. Directs the Department of Transportation to assess and propose opportunities to accelerate testing and evaluation of new decarbonization materials and methods for concrete by the Materials Bureau. Amends the Illinois Income Tax Act to make conforming changes.

LRB103 37548 JAG 67672 b

1 AN ACT concerning safety.

2 **Be it enacted by the People of the State of Illinois,**
3 **represented in the General Assembly:**

4 Section 1. Short title. This Act may be cited as the
5 Concrete Carbon Utilization, Reduction, and Removal
6 Breakthrough Act.

7 Section 5. Findings. The General Assembly finds that:

8 (1) Embodied carbon emissions, which result from the
9 production of products, as distinct from operational
10 carbon, which results from the use of products, is a major
11 source of overall emissions contributing to climate
12 change.

13 (2) Portland cement, a fundamental component of
14 concrete, is a leading source of industrial carbon dioxide
15 emissions, the main greenhouse gas contributing to climate
16 change. Portland cement emissions are also among the most
17 difficult to rapidly and economically abate.

18 (3) Successful efforts to reduce overall carbon
19 dioxide emissions must include measures to reduce carbon
20 emissions resulting from the production and use of
21 Portland cement.

22 (4) Most Portland cement is used for the production of
23 concrete, serving as the principal binding agent that

1 gives concrete many of its advantageous performance and
2 strength characteristics.

3 (5) Concrete is an essential, indispensable material
4 for construction, is foundational to the modern built
5 environment, and is the most used construction material in
6 the world. As a result of increased urbanization and
7 infrastructure replacement and renewal, the use of
8 concrete is projected to significantly increase in the
9 coming decades.

10 (6) The public sector in the United States, including
11 national, State, and local governments, is a major
12 procurer of concrete, amounting to over 30% of all
13 purchases and uses. Government agencies also regulate
14 standards and materials related to concrete specification
15 and use.

16 (7) Through its procurement and regulatory choices,
17 the State can play an important role in attaining emission
18 reductions in concrete and catalyzing a market for lower
19 carbon concrete.

20 (8) Because Portland cement-based concrete is a high
21 embodied carbon material, because concrete is an
22 indispensable material that cannot be replaced in a
23 timeframe meaningful for effective, science-based climate
24 action, and because concrete production is projected to
25 increase, rather than decline, in the future, innovation
26 in the materials and methods related to concrete is

1 critical to reducing emissions associated with its
2 production and use.

3 (9) Concrete possesses the unique physical capacity to
4 durably store carbon dioxide that was formerly in the
5 atmosphere for time periods that are effectively
6 permanent. Consequently, combining embodied carbon
7 reduction in concrete with carbon removal and storage in
8 concrete has the potential to dramatically eliminate the
9 net emissions of the material and result in the eventual
10 attainment of carbon negativity, which means removing,
11 through a process or product, more carbon dioxide from the
12 atmosphere than that process or product emits or
13 generates.

14 (10) In recent years a variety of innovations that
15 both reduce concrete's embodied carbon and enable carbon
16 removal and storage to occur in different components of
17 concrete have been identified, tested, improved, and
18 commercialized.

19 (11) The State should:

20 (A) establish a program that incentivizes private
21 concrete producers who hold contracts with State
22 departments, agencies, and authorities to specify
23 materials and use methods in the production of
24 concrete for public projects that reduce the embodied
25 carbon of concrete, and enable the storage of carbon
26 dioxide formerly in the atmosphere in the projects;

1 and

2 (B) adapt existing standards used by State
3 agencies related to the specification of concrete, and
4 the approval of materials permitted for specification,
5 to promote the acceptance and use of materials and
6 methods that reduce or remove and store carbon dioxide
7 in concrete, while ensuring at a minimum that quality,
8 performance, cost, and public safety are not adversely
9 affected or compromised in anyway, and, optimally, are
10 improved relative to current practice.

11 Section 10. Definitions. As used in this Act:

12 "Agency" means the Environmental Protection Agency.

13 "Carbon removal" means the direct removal of carbon
14 dioxide from the atmosphere using different technologies and
15 methods.

16 "Concrete-enabled carbon removal and storage" means the
17 use of technologies or methods that remove carbon dioxide from
18 the atmosphere, that recycle the carbon dioxide through its
19 use in the concrete manufacturing process or parallel
20 processes related to agricultural, industrial, or construction
21 activities, and that results in the durable, irreversible
22 storage of the removed carbon dioxide in mineral or stable
23 organic forms.

24 "Concrete" means structural and nonstructural masonry, and
25 precast and ready-mix concrete building products.

1 "Department" means the Department of Commerce and Economic
2 Opportunity.

3 "Durable carbon storage" means the storage of carbon
4 dioxide that has been removed from the atmosphere via
5 chemical, mineral, or biological processes in one or more
6 materials, such as concrete or other media, over a time a
7 period that has been assessed to be either permanent or no less
8 than 1,000 years, based on assessment and verification
9 criteria that have been approved by the Agency.

10 "Embodied carbon emissions" means carbon emissions
11 generated as a result of a material's production, including
12 mining, refining, manufacturing, and shipping.

13 "Environmental product declaration" means a
14 product-specific Type III environmental product declaration
15 that conforms to ISO Standard 14025, assesses the numeric
16 global warming potential of the product, and allows for
17 environmental impact comparisons between concrete mixes
18 fulfilling the same functions.

19 "Global warming potential" means a numeric value,
20 quantified in kilograms of carbon dioxide per ton of material,
21 that measures the total contribution to global warming from
22 the emission of greenhouse gasses or the elimination of
23 greenhouse gas sinks, as a result of the production or use of
24 concrete.

25 "Global warming potential baseline" means the numeric
26 global warming potential value that determines whether a

1 producer is eligible to receive the tax credit defined in this
2 Section.

3 "Low embodied carbon concrete" means concrete that has
4 been certified to embody lower carbon emissions, as measured
5 by a global warming potential metric, than the baseline
6 embodied carbon emissions of conventional concrete made with
7 Portland cement. Low embodied carbon emissions may be achieved
8 through any combination of:

9 (1) emissions reductions realized during the concrete
10 production process resulting from: (A) the reduction of
11 clinker content in the cement component of concrete; (B)
12 the substitution of clinker content with lower
13 carbon-intensive alternative materials such as ground,
14 granulated blast furnace slag, fly ash, silica fume,
15 natural pozzolans, calcined clay, recycled ground-glass
16 pozzolan, or biochar; (C) improved energy efficiency in
17 plant operations; and (D) low carbon electricity or heat
18 utilization in plant operations;

19 (2) the utilization and permanent storage of carbon
20 dioxide in concrete materials, including cementitious
21 materials, aggregates, and admixtures, in the form of
22 mineralized carbonates or pyrolyzed biological matter; or

23 (3) the application of alkaline waste or recycled
24 concrete material in agricultural, industrial, and
25 construction applications to permanently mineralize carbon
26 through chemical processes.

1 "Performance-based specification" means a contract
2 provision that requires that a structural material achieve
3 specified performance outcomes from the use of the structural
4 material, including, but not limited to, outcomes related to
5 the strength, durability, permeability, or other attributes
6 related to the function of the building material for applied
7 uses, as opposed to requiring that a structural material be
8 produced using a specific prescribed manufacturing process,
9 design features, technologies, or proportions of constituent
10 materials.

11 "Portland cement" means hydraulic cement produced by
12 pulverizing clinkers in combination with one or more of the
13 forms of calcium sulfate.

14 Section 15. Producer tax credits.

15 (a) For taxable years beginning on or after January 1,
16 2025, a taxpayer that is a producer of concrete and meets the
17 requirements of this Section shall be allowed a credit against
18 the tax imposed by subsections (a) and (b) of Section 201 of
19 the Illinois Income Tax Act as provided in subsection (c).

20 (b) In order to qualify for a tax credit, a concrete
21 producer shall:

22 (1) deliver, pursuant to a contract with a State
23 agency, authority, or department with a private
24 contracting firm that has been contracted by the State,
25 concrete that is used in a construction or improvement

1 project requiring the purchase of 50 cubic yards or more
2 of concrete and that is low embodied carbon concrete or
3 concrete that incorporates carbon removal, utilization,
4 and storage technology; and

5 (2) submit to the Department a global warming
6 potential value for the delivered concrete in the form of
7 a certified environmental product declaration; for
8 contracts that include multiple concrete mixes, the global
9 warming potential of all the mixes shall be proportionally
10 weighted into a single global warming potential score that
11 serves as the basis for the amount of the tax credit.

12 (c) The Department shall, by rule and in consultation with
13 the Agency, develop a formula for determining the amount of
14 the credit award under this Section, which, except as provided
15 in subsection (d), shall not exceed 10% of the material costs
16 of the concrete delivered.

17 (d) If the taxpayer receives credits under this both this
18 Section and Section 25, the total amount of the both tax
19 credits may not exceed 8% of the costs of the concrete
20 delivered.

21 (e) In order to receive the tax credit allowed under this
22 Section, a taxpayer shall apply to the Department for a
23 certification that:

24 (1) certifies that each claimed concrete delivery
25 meets the requirements of this Section;

26 (2) provides that the certified environmental product

1 declaration submitted under paragraph (2) of subsection
2 (b) has been approved by the Department; and

3 (3) sets forth the amount of the tax credit calculated
4 under this Section.

5 The application shall include a copy of the contract
6 pursuant to which concrete was delivered and any other
7 information determined relevant by the Department. Upon
8 certification, the Department shall submit a copy of the
9 contract to the taxpayer and the Department of Revenue.

10 (f) The Department may approve an application and issue a
11 certification to a taxpayer that has previously been allowed a
12 tax credit under this Section. When filing a tax return that
13 includes a claim for a credit pursuant to this Section, the
14 taxpayer shall include a copy of the certification issued by
15 the Department.

16 (g) The Department may not approve an application or issue
17 a certification to a taxpayer for tax credits under this
18 Section in excess of \$1,000,000.

19 (h) The order of priority of the application of the credit
20 allowed under this Section shall be as prescribed by the
21 Department. The amount of the credit under this Section shall
22 not reduce a taxpayer's tax liability under the Illinois
23 Income Tax Act to less than zero. Any credit shall be valid in
24 the taxable year in which the certification is approved, and
25 any unused portion of the credit may be carried forward to the
26 next 7 taxable years or until the credit amount is depleted,

1 whichever is earlier.

2 (i) The amount of tax credits that may be issued pursuant
3 to this Section may not in the aggregate exceed \$10,000,000 in
4 any year. The Department shall issue certifications for the
5 tax credit pursuant to this Section on a first-come,
6 first-serve basis.

7 Section 20. Department guidelines.

8 (a) Whenever a State agency or department purchases 50
9 cubic yards or more of concrete or undertakes any construction
10 or improvement project that requires the use 50 cubic yards or
11 more of concrete, the agency or department shall follow the
12 rules established by the Department under Section 40.

13 (b) In preparing the specifications for any contract for
14 the purchase of 50 cubic yards or more of concrete, or for any
15 construction or improvement project that requires the use 50
16 cubic yards or more of concrete, the Director of Central
17 Management Services or any other State agency having the
18 authority to contract for the purchase of goods or services
19 shall include in the invitation to bid, where relevant, a
20 statement that any response to the invitation that proposes or
21 calls for the use low embodied carbon concrete or concrete
22 that utilizes carbon removal, utilization, and storage
23 technology shall be eligible for tax credits pursuant to this
24 Act. If the Department of Central Management Services or other
25 contracting State agency makes a determination to purchase or

1 use low embodied carbon concrete or concrete that uses carbon
2 removal, utilization, and storage technology in the
3 construction project, the Department of Central Management
4 Services shall include in the invitation to bid a
5 predetermined bid allowance price for the concrete, which
6 shall be used by all bidders in the public bidding process.

7 (c) Nothing in this Section shall be construed to impose
8 any liability upon, or to give rise to a cause of action
9 against, a concrete producer.

10 (d) Nothing in this Section shall be construed to exempt
11 any entity from complying with any applicable law, rule,
12 standard, or specification, including, but not limited to,
13 those regarding the use of concrete in construction projects.

14 Section 25. Establish producer tax credit to defray the
15 cost of implementing environmental product declaration
16 technologies.

17 (a) For taxable years beginning on or after January 1,
18 2025, a taxpayer that is a producer of concrete or a producer
19 of a major component of concrete, including cement or
20 aggregate, shall be allowed a credit against the tax imposed
21 pursuant to subsections (a) and (b) of Section 201 to
22 compensate the taxpayer for costs incurred as a result of
23 implementing environmental product declaration technologies to
24 determine the product-based embodied carbon emissions of
25 concrete produced at a production facility that the taxpayer

1 owns or operates.

2 (b) The amount of the credit authorized pursuant to this
3 Section shall not exceed the lesser of: (i) the full cost
4 incurred for an environmental product declaration analysis of
5 a single concrete, cement, aggregate, or related production
6 facility or (ii) \$3,000. A taxpayer may claim the credit
7 authorized under this Section for the cost of completing
8 environmental product declaration analyses at up to 8
9 production facilities owned or operated by the same taxpayer
10 in a single taxable year.

11 (c) The order of priority of the application of the tax
12 credit allowed pursuant to this Section, and any other credits
13 allowed against the tax imposed pursuant to the Department of
14 Commerce and Economic Opportunity Law of the Civil
15 Administrative Code of Illinois, for a privilege period, shall
16 be as prescribed by the Director. The amount of the credit
17 applied under this Section against the tax imposed pursuant to
18 the Department of Commerce and Economic Opportunity Law of the
19 Civil Administrative Code of Illinois, shall not reduce a
20 taxpayer's tax liability to an amount less than the statutory
21 minimum. The amount of the tax credit otherwise allowable
22 under this Section which cannot be applied for the privilege
23 period due to the limitations of this subsection or under
24 other provisions of the Civil Administrative Code of Illinois,
25 may be carried forward, if necessary, to the 7 privilege
26 periods following the privilege period for which the tax

1 credit was allowed.

2 Section 30. Performance-based standards for the
3 specification of concrete. The Department of Central
4 Management Services and the Department of Transportation shall
5 be directed to develop and implement performance-based
6 specifications for concrete for use in buildings as well as
7 horizontal roadways and infrastructure, including modular
8 units, such as concrete masonry units and concrete brick, by
9 no later than January 1, 2025. The performance-based
10 specifications shall include global warming potential
11 thresholds equal to the maximum global warming potential
12 thresholds established for approved low carbon concrete green
13 procurement specifications.

14 Section 35. Expedited review process of low carbon
15 concrete materials and methods. The Department of
16 Transportation shall be directed to prepare a plan by no later
17 than the effective date of this Act, to enable the Materials
18 Bureau to implement an expedited evaluation protocol for low
19 embodied carbon concrete products, materials and methods
20 submitted for evaluation by private manufacturers and
21 suppliers for inclusion in the Department's approved materials
22 list. The plan will include an assessment of all necessary
23 technical and staff resources required to effectively evaluate
24 and test new materials and methods in a comprehensive and

1 timely manner. The plan will be reviewed by the Governor and
2 the General Assembly to determine what fiscal resources would
3 be required to implement the plan, and what budgetary actions
4 should be taken to fund it.

5 Section 40. Administrative authority and rulemaking.

6 (a) The Agency shall adopt rules to implement the
7 provisions of this Act, except that the Department shall adopt
8 rules concerning the tax credits provided in Sections 15 and
9 25. The Agency's rules shall include, but not be limited to:

10 (1) global warming potential baselines for concrete
11 mixes supplied pursuant to contracts with State agencies;

12 (2) thresholds for low embodied carbon concrete and
13 concrete that incorporates carbon removal, utilization,
14 and storage technology to qualify for a tax credit under
15 Section 15;

16 (3) a uniform process for concrete producers to
17 certify that concrete is low embodied carbon concrete, or
18 that it utilizes carbon removal, utilization, and storage
19 technology, and for determining the global warming
20 potential value of concrete;

21 (4) guidelines for training State contracting
22 personnel to implement the requirements of this Act; and

23 (5) a mechanism for monitoring contractor compliance
24 with the requirements of this Act.

25 (b) The Department shall adopt rules concerning the tax

1 credits provided in Sections 15 and 25.

2 (c) No later than 2 years after the effective date of this
3 Act, the Director, in consultation with the State Treasurer,
4 shall prepare and submit a report to the Governor and the
5 General Assembly, containing a cost-benefit analysis of the
6 tax credits established in Section 15 in order to quantify the
7 budgetary impact of the program relative to its carbon
8 reduction impact. The report shall recommend whether the
9 program should be continued, modified, or repealed, and
10 include any recommendations for legislative or regulatory
11 action to improve the program.

12 Section 900. The Illinois Income Tax Act is amended by
13 adding Section 241 as follows:

14 (35 ILCS 5/241 new)

15 Sec. 241. Concrete Carbon Utilization, Reduction, and
16 Removal Breakthrough Act. For taxable years beginning on or
17 after January 1, 2025, each taxpayer that is awarded a credit
18 under the Concrete Carbon Utilization, Reduction, and Removal
19 Breakthrough Act is entitled to a credit against the taxes
20 imposed by subsections (a) and (b) of Section 201 as provided
21 in that Act.