SB-285 Net zero greenhouse gas emissions goal: carbon dioxide removal: regulations. (2025-2026)

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CALIFORNIA LEGISLATURE— 2025–2026 REGULAR SESSION

SENATE BILL NO. 285

Introduced by Senator Becker

February 05, 2025

An act to amend Section 39741.4 of, and to add Section 38562.3 to, the Health and Safety Code, relating to greenhouse gases.

LEGISLATIVE COUNSEL'S DIGEST

SB 285, as amended, Becker. Net zero greenhouse gas emissions goal: carbon dioxide removal: regulations.

The California Global Warming Solutions Act of 2006 establishes the State Air Resources Board as the state agency responsible for monitoring and regulating sources emitting greenhouse gases. The act requires the state board to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to ensure that statewide greenhouse gas emissions are reduced to at least 40% below the 1990 level by 2030. The act requires the state board to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions and to update the scoping plan at least once every 5 years. Existing law requires the state board, as part of its scoping plan, to establish specified carbon dioxide removal targets for 2030 and beyond.

Existing law, the California Climate Crisis Act, declares the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels.

~~Existing law, the Climate Corporate Data Accountability Act, requires, on or before July 1, 2025, the state board to develop and adopt regulations to require a reporting entity to annually disclose to the emissions reporting organization, as defined, or the state board all of the reporting entity's scope 1 emissions, scope 2 emissions, and scope 3 emissions, as defined.~~

This bill would, for the purpose of meeting, or tracking progress against, any state requirement to achieve net zero emissions of greenhouse gases, ~~or for the purpose of reporting offsets against any of a reporting entity's greenhouse gas emissions as part of reporting required pursuant the Climate Corporate Data Accountability Act,~~ authorize only qualified carbon dioxide removal, as defined, to be used to ~~reduce~~ *counterbalance* the state's or an entity's greenhouse gas emissions and would require qualified carbon dioxide removal used for those purposes to meet certain requirements, as specified.

Existing law requires the state board to establish a Carbon Capture, Removal, Utilization, and Storage Program to, among other things, evaluate the efficacy, safety, and viability of carbon capture, utilization, or storage technologies and carbon dioxide removal technologies and facilitate the capture and sequestration of carbon dioxide from those technologies, where appropriate. In furtherance of the objectives of that program, existing law authorizes the state board, by January 1, 2024, to adopt protocols to support additional methods of utilization or storage of captured carbon dioxide.

This bill would indefinitely authorize the state board to adopt those protocols, and protocols to support methods of utilization or storage of removed carbon dioxide.
Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

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THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. (a) The Legislature finds and declares all of the following:

(1) The United Nations' Intergovernmental Panel on Climate Change (IPCC) has recognized that limiting global warming to 1.5 degrees Celsius (2.7 degrees Fahrenheit) over preindustrial times will require not only large reductions in global carbon dioxide emissions from human sources but also carbon dioxide removal (CDR) from the atmosphere. "Climate Change 2022: Mitigation of Climate Change," a report by the IPCC released in early 2022, states, "[t]he deployment of CDR to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO2 or GHG emissions are to be achieved."

(2) Assembly Bill 1279 (Muratsuchi, Chapter 337 of the Statutes of 2022) established a target for reducing greenhouse gas (GHG) emissions by at least 85 percent from 1990 levels by 2045 as part of achieving net zero GHG emissions. California will need to employ CDR to balance out the remaining up to 15 percent GHG emissions to achieve the net zero target.

(3) The State Air Resources Board's "2022 Scoping Plan for Achieving Carbon Neutrality," dated November 16, 2022, states, "[t]he modeling shows that emissions from the AB 32 GHG Inventory sources will continue to persist even if all fossil related combustion emissions are phased out. These residual emissions must be compensated for to achieve carbon neutrality."

(4) The 2022 Scoping Plan estimated that the state would need approximately 75 million metric tons (MMT) of CDR in 2045 in order to achieve net zero GHG emissions. It further identified a target of 7 MMT per year of CDR by 2030 as "an ambitious, but achievable, goal" that "can serve as an important marker for progress in deploying CDR to support California's carbon neutrality goal."

(5) Therefore, although CDR should not be seen as a reason to prolong the state's reliance on fossil fuels or as an excuse for not reducing GHG emissions as quickly as is feasible, CDR is widely predicted to be an important and necessary part of achieving the state's net zero target.

(6) A diversity of approaches can be used to remove carbon dioxide from the atmosphere and sequester it, including natural processes, engineered mechanical and chemical processes, or a combination of these approaches.

(7) Once carbon dioxide is released into the atmosphere from previously inert sources, such as fossil fuels, it "causes increases in atmospheric concentrations of CO2 that will last thousands of years," according to the United States Environmental Protection Agency.

(8) CDR that is intended to balance out continued emissions of greenhouse gases should result in long-lasting reductions in carbon dioxide in the atmosphere on a similar time scale to that of the released greenhouse gases and should represent true removals of carbon dioxide from the atmosphere and not just the avoidance of emissions that might otherwise have occurred, as is sometimes allowed in carbon offset programs.

(9) The use of carbon capture, utilization, and storage technologies to prevent greenhouse gas emissions *from anthropogenic sources* represents an avoidance or reduction of emissions, not the removal of carbon dioxide from the atmosphere, and should therefore be counted toward the state's greenhouse gas emissions reduction targets and not toward the state's carbon dioxide removal targets.

(10) Developing and manufacturing the technologies needed to remove and sequester carbon dioxide and building and operating the facilities and supporting infrastructure used for CDR can be a source of jobs, economic development, and tax revenues for the state and can establish the state as a leader in exporting these products to help the rest of the world achieve reductions in net GHG emissions.

(b) It is the intent of the Legislature that ~~any carbon offsets or CDR~~ *only CDR that meets minimum standards for quality and durability may be* counted for the purpose of ~~meeting~~ *counterbalancing any remaining greenhouse gas emissions to meet* any state goal, target, or legal requirement to achieve net zero emissions of greenhouse ~~gases meet minimum standards for quality and durability so that these net zero claims have scientific integrity.~~ *gases.*

SEC. 2. Section 38562.3 is added to the Health and Safety Code, to read:

38562.3. (a) For purposes of this section, the following definitions apply:

(1) “Agricultural residues” means agricultural crop residues and waste biomass associated with horticultural or agronomic practices, such as pruning or removal of plant biomass from agricultural sources that were not grown primarily for the purpose of supplying biomass energy or carbon removal processes.

(2) “Carbon dioxide equivalent” has the same meaning as defined in Section 38505.

(3) “Carbon dioxide removal” means a net reduction of carbon dioxide from the atmosphere by a process that uses biological means, chemical means, physical means, or any combination of these means, and that puts the removed carbon atoms into a form of carbon sequestration, including the use of CDR technology, as defined in Section 39741, and carbon dioxide removal through the use of nature-based climate solutions, as defined in Section 38561.5. The carbon dioxide removal process may remove carbon from the atmosphere directly or indirectly, including by direct air capture or using carbon stored in biomass or soil or absorbed in water, but may not represent only an avoidance or reduction of greenhouse gas emissions.

(4) “Carbon sequestration” means storing carbon atoms in a geological location or in a stable chemical or biological form so that the geological location or the stable chemical or biological form keeps the carbon atoms from reentering the atmosphere as a greenhouse gas for an extended period of time.

(5) “Durable carbon dioxide removal” means either of the following:

(A) A type of qualified carbon dioxide removal that uses a form of durable carbon sequestration.

(B) Any other type of qualified carbon dioxide removal that, at the end of the guarantee period for its carbon sequestration, is coupled with an enforceable commitment to provide an equal quantity of qualified carbon dioxide removal meeting the criteria of subparagraph (A).

(6) “Durable carbon sequestration” means carbon sequestration that uses a form of long-term carbon storage with requirements for financial responsibility and longevity consistent with, or equivalent to, those required under Section 39741.5, as determined by the state board.

(7) “Forestry residues” means byproducts of sustainable forest management, biomass that is removed to reduce the risk of wildfires, wood processing wastes, and residues from forest product manufacturing processes.

(8) “Guarantee period” means the period of time during which an entity is responsible for ensuring that sequestered carbon remains in storage and for replacing any losses in excess of expected attrition or established buffers.

(9) “Municipal organic waste” means organic wastes that are separated or diverted from the municipal solid waste stream, organic wastes from municipal wastewater treatment processes, and other non-marketable biogenic wastes created by non-agricultural commercial or industrial processes.

(10) “Natural and working lands” has the same meaning as defined in Section 39740.1.

(11) “Short-lived climate pollutants” has the same meaning as defined in Section 39730.

(12) “Qualified carbon dioxide removal” means carbon dioxide removal that meets all of the following:

(A) If the carbon dioxide removal process requires terrestrial biomass as a feedstock, it only uses biomass from agricultural residues, forestry residues, or municipal organic waste.

(B) The carbon dioxide removal process is not used for purposes of enhanced oil recovery, including the facilitation of enhanced oil recovery from another well.

(C) The carbon dioxide removal process is consistent with the requirements of paragraph (3) of subdivision (a) Section 39741.1, as applicable, as determined by the state board.

(b) For the purpose of meeting, or tracking progress against, any state goal, target, or legal requirement to achieve net zero emissions of greenhouse gases, including pursuant to Section 38561.2, Section 38562.2, and Section 38562.4, ~~or for the purpose of reporting offsets against any of a reporting entity's greenhouse gas emissions as part of reporting required pursuant to Section 38532,~~ all of the following shall apply:

(1) Only qualified carbon dioxide removal may be used to ~~reduce~~ *counterbalance* the state's or an entity's ~~net~~ *remaining* greenhouse gas emissions, including to counterbalance the net emissions of greenhouse gases, if any, from the state's natural

and working lands.

(2) The qualified carbon dioxide removal used to counterbalance each type of greenhouse gas emissions for purposes of paragraph (1) shall use a form of carbon sequestration with substantially equivalent duration to the longevity of the form of storage from which the greenhouse gas was released when emitted or the longevity of the greenhouse gas in the atmosphere once emitted, subject to all of the following:

(A) Emissions of carbon dioxide from fossil fuels or from carbon that was previously held in a stable, long term mineral form, such as a carbonate rock, may only be counterbalanced by durable carbon dioxide removal.

(B) Emissions of carbon dioxide from relatively short-term forms of storage in the natural carbon cycle, such as from soils and biological forms, may be counterbalanced by negative net emissions from natural and working lands or by other qualified carbon dioxide removal with carbon sequestration of at least equivalent storage duration.

(C) Emissions of short-lived climate pollutants may be counterbalanced by an equal quantity, on a carbon dioxide equivalent basis, of negative net emissions from natural and working lands or of other qualified carbon dioxide removal with carbon sequestration that is at least equivalent in duration to the short-lived climate pollutant's average lifetime in the atmosphere.

(c) When reporting information for the purposes described in subdivision (b), an entity responsible for that reporting shall provide the amount of greenhouse gas emissions and the amount of qualified carbon dioxide removal used to counterbalance those emissions as separate numbers and shall provide sufficient detail about the types of greenhouse gas emissions and types of qualified carbon dioxide removals used to counterbalance those greenhouse gas emissions to demonstrate compliance with subdivision (b).

(d) This section does not restrict what can be used as an offset credit within the market-based mechanism established pursuant to Section 38562.

(e) This section does not restrict the types of voluntary carbon offsets or other tradeable instruments that may be used to meet voluntary pledges to achieve reductions in net emissions of greenhouse gases or for the reporting of progress against those pledges.

SEC. 3. Section 39741.4 of the Health and Safety Code is amended to read:

39741.4. In furtherance of the objectives in Section 39741.1, the state board may adopt protocols to support additional methods of utilization or storage of captured or removed carbon dioxide, including for use in products and in methods of long-term storage as identified by the state board.