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**SENATE COMMITTEE ON ENERGY, UTILITIES AND  
COMMUNICATIONS**  
**Senator Ben Hueso, Chair**  
**2021 - 2022 Regular**

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**Bill No:** SB 1399 **Hearing Date:** 4/18/2022  
**Author:** Wieckowski  
**Version:** 4/7/2022 Amended  
**Urgency:** No **Fiscal:** Yes  
**Consultant:** Sarah Smith

**SUBJECT:** Carbon Capture Technology Demonstration Project Grant Program

**DIGEST:** This bill requires the California Energy Commission (CEC) to establish a grant program to fund carbon capture and storage demonstration projects at industrial facilities in the state.

**ANALYSIS:**

Existing law:

- 1) Establishes the CEC to carry out specified activities relating to the state's energy policy and planning, including, but not limited to the following: adopting standards for building and appliance energy efficiency; tracking the demand and supply of energy resources; siting large thermal power plant facilities; tracking certain renewable energy purchases; administering energy research and development grants; and provide funding for zero-emission vehicle technology and infrastructure. (Public Resources Code §25200 et. seq.)
- 2) Defines a "thermal powerplant" as any thermal electrical generating facility with a capacity of 50 megawatts (MW) or more and designates the CEC as the lead California Environmental Quality Act (CEQA) review agency for projects subject to the CEC's powerplant siting review authority. Any other public agency that must make a decision related to the CEQA review of a powerplant facility subject to the CEC's authority must use the CEC's certification review as the environmental impact report for that decision. (Public Resources Code §§25120 and 25519)
- 3) Establishes the Electric Program Investment Charge (EPIC) program at the CEC to fund research, demonstration and market deployment projects that help address the state's climate goals, including energy storage, renewable energy grid integration, energy efficiency, integration of electric vehicles into the electrical grid, and accurately forecasting the availability of renewable energy. (Public Resources Code §25710 et. seq.)

This bill:

- 1) Requires the CEC to establish by September 30, 2024, a competitive grant program to fund projects that deploy and commercialize carbon capture technologies to significantly improve the efficiency, effectiveness, cost, emissions reductions, and environmental performance of existing industrial facilities, natural gas electric generation facilities, and biomass electric generation facilities.
- 2) Requires the CEC to provide by January 1, 2025, grants to eligible entities to create three projects to capture carbon dioxide from an existing industrial, natural gas, or biomass electric generation facility.
- 3) Defines an entity eligible for CEC grants under this bill as an owner of an existing industrial facility, a natural gas electric generation facility, or a biomass electric generation facility.
- 4) Defines eligible industrial facilities as in-state industrial facilities that generate greenhouse gas emissions. These facilities may include, but are not limited to, ethanol production facilities, hydrogen production facilities, and cement production facilities.
- 5) Requires the CEC to adopt guidelines for the carbon capture grant program to ensure that grants are awarded to a geographically diverse group of applicants, projects meet certain emissions reduction goals, and applicants leverage multiple sources for funding. This bill requires the CEC to prioritize applicants that apply for funding from the federal Carbon Capture Technology Program and ensure that projects only use carbon dioxide for long-term storage and not for any other purposes such as oil and gas recovery.
- 6) Requires the CEC to develop goals for the carbon capture grant program and specifies certain objectives the CEC must consider when developing program goals, including, but not limited to, the following objectives:
  - a) Using carbon capture technologies to decrease the environmental impact of carbon dioxide emissions from industrial facilities.
  - b) Accelerating the deployment and commercialization of technologies to decrease emissions from industrial facilities.

- c) Identifying barriers to the commercial deployment of emerging technologies for the capture of carbon dioxide emissions from industrial facilities.
- 7) Requires the CEC to work with specified agencies when developing the grant program pursuant to this bill, including the following agencies:
- a) The Geologic Energy Management Division.
  - b) The Department of Conservation's California Geological Survey
  - c) The State Air Resources Board.
  - d) The State Water Resources Control Board.
  - e) The Department of Fish and Wildlife.
  - f) The State Lands Commission.
  - g) The Natural Resources Agency.
  - h) Air quality management districts and local air pollution control districts.
  - i) Regional water quality control boards.
- The CEC must also invite these agencies to a task force to help obtain the permits necessary to site carbon capture projects under this bill.
- 8) Specifies that receipt of grant funds under this bill does not prevent an entity from generating low carbon fuel standard credits.

## Background

*What is carbon capture and where is it used?* Carbon capture and storage (also known as sequestration) is the process of capturing carbon dioxide from emissions sources and storing the carbon dioxide. Stored carbon dioxide can be reused in certain processes (including producing certain consumers goods and oil extraction), or it can permanently sequestered to limit emissions into the environment. When carbon dioxide is stored in underground geological formations, the storage is known as geological carbon storage. When carbon dioxide is consumed and stored in vegetation, soils, and water, the storage is known as biological carbon storage. While carbon capture is still in early stages of development as a technology, it has gained recognition as an emissions mitigation strategy for "hard to abate" industries that produce a significant amount of carbon dioxide and lack other strategies for reducing or eliminating emissions from their industrial processes. Recent reports from both the United Nations Intergovernmental Panel on Climate Change (IPCC) and the National Academies of Sciences, Engineering and Medicine indicate that reducing future emissions may not be sufficient to meet global climate goals, and carbon capture may be a necessary components of strategies to limit emissions from industrial sources.

*Bill's grant program is limited to projects that only store carbon dioxide.* While multiple methods exist for capturing carbon dioxide and other harmful emissions and some carbon capture systems also enable the reuse of carbon dioxide, this bill requires the CEC to establish a grant program for demonstration projects that only sequester carbon dioxide to limit emissions from industrial facilities. This bill requires the CEC to ensure that projects that receive grants under this bill do not use captured carbon dioxide for any purpose other than storage, including enhanced oil and gas recovery. Enhanced oil and gas recovery using carbon dioxide injection is a major scalable use of carbon capture and storage. While most carbon dioxide captured and used in enhanced oil and gas recovery is permanently stored, data on the lifecycle emissions associated carbon dioxide for oil and gas recovery vary and can depend these fossil fuels' end uses. Limiting grant recipients' ability to reuse captured carbon dioxide may limit the types of projects eligible for funds; however, it will also prevent grants from funding projects that could use carbon dioxide to extract fossil fuels, which can generate significant mobile source emissions.

*What funds are available for carbon capture grants?* This bill requires the CEC to administer a grant program to create carbon capture and storage demonstration projects; however, this bill does not specify a funding source for these grants. The bill contains various definition and provisions similar to those used for the Carbon Capture Technology Program (42 U.S.C. §16292) in the federal Infrastructure Investment and Jobs Act (IIJA), which was signed into law in November 2021. The author's office has indicated that this bill is intended to align with the federal Carbon Capture Technology Program to enable California to draw federal funds for supporting carbon capture projects in California. According to the U.S. Department of Energy (DOE), the IIJA will provide approximately \$6.5 billion over five years to support carbon management systems. However, the amount of funding available may depend on the types of technologies authorized at the state level and rules established by DOE for awarding funds. The DOE notes that approximately \$3.5 billion of the funds it received from the IIJA will be allocated to direct air capture hubs and IIJA provisions require DOE to fund multiple types of carbon capture demonstration and pilot projects.

*Is the CEC the best agency to administer a carbon capture grant program?* The CEC is one several state agencies that share duties for enacting the state's climate policies. While the CEC has extensive experience in power plant siting, administering energy research, demonstration and deployment projects, and overseeing long-term energy supply and demand trends, it may not have resources needed to determine the extent to which carbon capture projects are best suited to reducing sector-wide emissions from industrial sources. Under existing law, the California Air Resources Board (CARB) administers the largest ongoing source of

public incentives for carbon capture systems through its low carbon fuel standard (LCFS) program. In 2018, CARB modified its regulations for the LCFS program, enabling fuel production facilities to obtain LCFS credits for fuel generated in conjunction with carbon capture and sequestration systems that reduce emissions associated with the fuel production. In 2020, CARB also published a report on pathways to achieve Carbon Neutrality in California. All scenarios in the report rely on some degree of carbon capture and storage. In 2021, the Legislature passed SB 596 (Becker, Chapter 246, Statutes of 2021), which tasked CARB with developing a comprehensive strategy for the state's cement sector to achieve net-zero emissions of GHGs associated with in-state cement use, including funding measures to support demonstration projects that mitigate emissions from cement production facilities. The carbon capture projects that would be funded under this bill may compliment CARB's ongoing research and funding opportunities for carbon capture projects and provide more information on how carbon capture projects can be integrated into longer-term efforts to identify mechanisms for reducing emissions, including the Climate Change Scoping Plan.

*Need for Amendments.* As currently drafted, this bill requires the CEC to administer the carbon capture grant program. However, CARB has the greatest experience in administering grant programs for carbon capture projects aimed at reducing GHG emissions. *To the extent that the author and committee wish to better align this bill's grant program with existing carbon capture programs and efforts to reduce emissions from industrial facilities, the author and committee may wish to amend this bill to shift the administration of the carbon capture grant program administration established by this bill from the CEC to CARB.* As currently drafted, this bill does not specify a funding source for the grant program established by the bill. *To ensure that sufficient funds exist to fund the grant program, the author and committee may wish to amend this bill to make the administration of the grant program contingent upon receipt of funds appropriated by the Legislature.*

### **Prior/Related Legislation**

SB 905 (Skinner, 2022) would require CARB to administer a Geologic Carbon Sequestration Demonstration Initiative to fund up to three geologic carbon sequestration demonstration projects and would require CARB to adopt guidelines for carbon sequestration projects under the Initiative. The bill is currently in the Senate Committee on Education.

SB 1101 (Caballero, 2022) would require CARB to establish a carbon capture, utilization, and storage program to deploy carbon capture technologies to reduce

the carbon dioxide emissions from new and existing facilities. The bill is currently in the Senate Committee on Environmental Quality.

AB 1531 (O'Donnell, 2021) among other provisions, would establish the CEC as the lead agency for CEQA environmental reviews of proposed carbon capture and storage projects. The bill would also require the CPUC to authorize gas corporations to file applications for investments in carbon capture, sequestration, or utilization projects. The bill is currently in the Senate Committee on Appropriations.

SB 596 (Becker, Chapter 246, Statutes of 2021) requires CARB to develop, by July 1, 2023, a comprehensive strategy for the state's cement sector to achieve net-zero emissions of GHGs associated with in-state cement use as soon as possible, but no later than December 31, 2045.

**FISCAL EFFECT:** Appropriation: No Fiscal Com.: Yes Local: No

**SUPPORT:**

Agricultural Energy Consumers Association  
California Biomass Energy Alliance  
Clean Air Task Force  
RECARBON

**OPPOSITION:**

State Building and Construction Trades Council, unless amended

**ARGUMENTS IN SUPPORT:** According to the author:

As of September 2020, there were only five announced Carbon capture and storage (CCS) projects in varying stages of planning and development in California; none are operational. California has the funds, technical expertise, and extensive reservoir capacity needed to facilitate its adoption. Furthermore, CCS is a green, safe, and effective technology. Yet a lack of state support, permitting complexity, and high capital costs have all acted as barriers to California's adoption of CCS. SB 1399 would address all of these barriers through funding and continued technical assistance.

Climate change has already had devastating effects on Californians, particularly the poor and vulnerable. The more we fall short of our targets, the more intense and devastating these effects will be. We cannot afford to

leave options on the table that would otherwise help mitigate the impact of climate change. SB 1399 will help ensure that we don't.

**ARGUMENTS IN OPPOSITION:** The State Building and Construction Trades Council is opposed to this bill unless it is amended to specify that projects will provide specified workforce development benefits. In opposition, the Council states:

While we could not be bigger supporters of carbon capture and underground storage (CCUS) technology and believe that it will bring real benefits to our environment and energy production sector, we have requested amendments to the bill to clarify that the projects will pay the prevailing wage and require the use of a skilled and trained workforce.

**-- END --**