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Chair Lauren Sanchez
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Members of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: The Climate Center's Comments on Concepts for Potential Regulations for Establishing the Carbon Capture, Removals, Utilization, and Storage Program (SB 905)

Dear Chair Sanchez, Members of the Board, and Staff,

Thank you for the opportunity to submit comments on CARB's preliminary Concepts of Potential Regulations for the Carbon Capture, Removal, Utilization, and Storage Program pursuant to SB 905 (Caballero, 2022). We commend CARB staff for their effort to solicit broad stakeholder input prior to formal rulemaking, as well as adherence to creating regulations around project transparency and accurate monitoring, reporting, and verification.

The comments below focus on five core areas: 1) expanding applicability of CDR strategies, 2) transparent carbon accounting for CCS, CCUS, and CDR, 3) clarifying definitions, 4) establishing community safeguards and accessibility standards, and 5) strengthening financial responsibility requirements.

1. Expanding Applicability of CDR Strategies

Section 95702. The current list of applicable CDR approaches is limited and does not include several strategies that are relevant in the California context. We recommend CARB include the following categories and **create tailored reporting and oversight requirements for CDR approaches based on their risk profile and technological readiness**:

1. Enhanced Rock Weathering
2. Mineralization
3. Biochar
4. Biomass Burial
5. Direct Ocean Capture
6. Ocean Alkalinity Enhancement
7. Ocean Iron Fertilization
8. Artificial Upwelling (AU) and Artificial Downwelling (AD)

9. Kelp Sinking

2. Transparent Carbon Accounting for CCS, CCUS, and CDR

There is a legislative requirement in SB 905 to prevent double counting of emissions reductions from captured or removed carbon dioxide in tracking progress towards state climate goals. The state has differing emission reductions and carbon dioxide removal goals, and projects should be accounted for accordingly. AB 1279 (Muratsuchi, 2022) directed the state to directly reduce 85% of emissions from 1990 levels by 2045, thereby limiting carbon removal to up to 15% of emissions under this state target. Additionally, the 2022 Scoping Plan set specific goals for CCUS and CDR – 20 million metric tons (MMT) by 2030 and 100 MMT by 2045. **Therefore, this concept document, and subsequent SB 905 regulations, should address how CCUS and CDR projects are verified and accounted for in state climate goals.** High quality carbon accounting is critical to understand how these projects support California's climate goals, subsequently ensuring transparency of these projects and preventing double-counting.

3. Clarifying Definitions

We appreciate the provision of definitions for various concepts in this document. **However, the following definitions need further clarification:**

a. Right now, the definition for "Carbon Capture and Storage" or "CCS" does not clarify where carbon dioxide is separated from. The definition for "Carbon Capture and Utilization Technology" is clear that this technology separates CO_2 from industrial, commercial, or energy-related facilities or sources. **Therefore, the definition for "Carbon Capture and Storage" should be aligned with the definition for "Carbon Capture and Utilization Technology."**

b. The **final regulations should use the definition provided in SB 905 legislation for Carbon Dioxide Removal (CDR) Technology** which reads, ""CDR technology" means carbon dioxide removal, defined as anthropogenic activities that use technologies or engineered strategies to remove carbon dioxide from the atmosphere and put it into long-term storage, including direct air capture." Currently, the definition for "Carbon Dioxide Removal Technology" in the concept document refers to capturing carbon from industrial sources. This is CCS, not CDR. The definition should be updated for accuracy and to avoid conflating these different carbon management practices.

c. We ask that CARB provide clarification on why **"Synthetic CDR"** is separated from the other CDR definitions provided in the concept document, and how CARB defines "low carbon energy."

d. The definition for **"Carbon Mineralization"** states this approach can be engineered for "permanent geologic carbon dioxide removal." **We ask that CARB clarify how "geologic carbon dioxide removal" is different from "geologic storage or sequestration."**

e. The definition of "biogenic carbon storage" may not be needed if nature-based carbon removal strategies are not included in this regulatory framework.

f. In order to fully capture other CDR strategies beyond Bioenergy with Carbon Capture and Storage (BECCS), **CARB should define Biomass Carbon Removal and Storage (BiCRS) in line with previously proposed legislation.** One suggestion from previously proposed legislation is: "Long-term storage of carbon removal products, including, but not limited to, biochar and bio-oil that are generated from waste resources, including agriculture and forestry."

g. Furthermore, in order to effectively address California's biomass problem and safeguard arable land from purpose-grown crops or over-logging and deforestation, **CARB should define "waste biomass" in future regulations** and subsequently restrict any CDR strategies that require biomass for their operations to source the feedstock from residue or waste streams, including but not limited to, agricultural residues, municipal biosolids, and byproducts of sustainable forest management.

4. Establishing Community Safeguards and Accessibility Standards

Section 95703. General Project Reporting of CCUS and CDR Technologies focuses on ensuring the public can access permit and project information. To ensure this information is truly accessible to California residents, there should be **multilingual requirements** for project websites. These project websites should also **include information regarding the route of proposed or existing CO_2 pipelines** associated with the project.

Section 95704.3 Seismic Monitoring Requirements states that a seismic risk assessment should be a part of the baseline seismic monitoring plan and identify plausible risk scenarios. **We ask that CARB elaborate on what is meant by 'public nuisance' under this section. This risk assessment should also include the negative impacts of these projects under SB 905 to human health and property** including but not limited to headaches, nausea, asphyxiation, and vehicle failure, among other negative impacts of CO_2 leakage from pipelines and projects.

In addition, **the risk assessment should occur prior to siting the project** and if the seismicity risk is too great, then a project should not be sited in that area. The risk assessments should be verified by a third party, CARB, or the State Geologist and baseline seismicity monitoring should occur for multiple years to ensure enough data has been collected to safely plan a CCUS project.

Section 95705 seeks feedback on what information should be included in guidance documents as it relates to the permitting process for CCUS and CDR projects. **The final regulations should be clear that any CCS, CCUS, or CDR project is not exempt from the California Environmental Quality Act (CEQA) review process. These projects should not receive exemptions from the CEQA process as** carbon capture, utilization, and removal projects require energy, water, land, and built infrastructure that will impact local communities and ecosystems.

In addition to the comments above regarding specific definitions and sections of the concept document, there are other key topics that must be addressed in the final SB 905 regulations. **First, the concept document does not include any information or guidelines for**

community engagement and community benefits agreements. Since CCUS and industrial CDR projects can have great impacts on local communities, local residents must be made aware of proposed projects and project operators should be required to prove they are meaningfully engaging with local communities and integrating their feedback into project design.

All industrial CDR projects and any CCUS projects subject to SB 905 regulations, whether state or privately owned, should be subject to a set of comprehensive principles for community engagement and community benefits agreements. **The board should incorporate the following into future SB 905 regulations:**

a. A right of first refusal and a right to restitution for communities impacted by CCUS or CDR projects.
b. A requirement that the impact of the CCUS or CDR project should not adversely affect frontline communities.
c. A requirement to ensure the community has timely notice and opportunity for input about upcoming projects that are posted in the most common languages of the community.
d. A requirement for meaningful community engagement, accompanied by a list of best practices for community engagement and ownership.
    i. Recommended best practices for community engagement can be found in a letter from the **Environmental Justice Advisory Committee (EJAC)** of the California Air Resources Board to the U.S. Department of Energy in 2023[1].
    ii. Additional best practices for community engagement and ownership can be found on page 38 of our **Carbon Dioxide Removal in California report**[2].

5. Strengthening Financial Responsibility Requirements

We have **significant concerns about the adequacy of self-insurance as a qualifying instrument for financial responsibility for geologic storage projects under Section 95704.6.** Self-insurance depends on the ongoing financial health of a project operator or its parent company. For a project requiring a minimum of 100 years of monitoring, current financial conditions of these project developers is an inadequate determination of insurability, and leaves the project vulnerable in the event of bankruptcy or dissolution.

Additionally, **the regulations should directly address what happens after CARB is notified of a bankruptcy filing.** For one, CARB should have authority and a defined procedural pathway to assume regulatory oversight of the storage site in question until another operator is identified and appointed.

We **support a requirement for geologic storage operators to engage an independent assurance provider to verify project financials** and compliance with long-term financial responsibility requirements. Geologic carbon dioxide storage is uniquely high-stakes from a public protection standpoint. **Injected CO_2 that is buoyant can potentially extend beyond boundaries of an operator's land holdings, and if that plume migrates, it can contaminate drinking water supplies, lead to seismic activity, or leak back into the atmosphere.** The scale of financial risk, including 100+ years of post-injection monitoring and potential corrective action costs, exceed what routine internal financial reporting can reliably verify. An independent

[1] https://www.filesforprogress.org/pdfs/DAC_hubs_DOE_letter.pdf
[2] https://theclimatecenter.org/wp-content/uploads/2025/12/Carbon-Dioxide-Removal-in-California

assurance provider can provide communities and regulators with credible confidence that project financials are adequate to cover the full range of projected future costs.

We also **support the inclusion of the additional activities to demonstrate financial responsibility under Subsection 95704.6(b)(2).** By extending Class VI post-injection monitoring to 100 years, conducting additional ambient CO_2 and seismic monitoring, and ensuring emergency and remedial response covers additional seismic events, the state can ensure that sequestered CO_2 **meets high-quality standards for permanence, as defined in SB 905, makes a meaningful contribution to California's climate goals, and provides assurance to regulators and nearby communities**.

Thank you for your time and consideration of this letter. If there are any questions related to these recommendations please feel free to reach out to Baani Behniwal (baani@theclimatecenter.org) and Katy Webb (katy@theclimatecenter.org). We look forward to continued collaboration with the California Air Resources Board as these CCUS and CDR regulations are established.

Sincerely,

Ellie Cohen
CEO
The Climate Center