



March 27, 2025

Chair Liane M. Randolph  
California Air Resources Board  
1001 I St.  
Sacramento, CA 95814

*Submitted electronically via the web at*  
<https://ww2.arb.ca.gov/public-comments/public-feedback-carbon-capture-removal-utilization-and-storage-program-sb-905>

**Re: February 27 Public Workshop  
on Carbon Capture, Removal, Utilization and Storage Program (SB 905)**

Honorable Chair Randolph:

Biofuelwatch<sup>1</sup> is an international organization that works to increase public understanding and civic engagement on the land-use implications of climate policy. We have a particular focus on the environmental harms and social inequities of large-scale industrial bioenergy projects, and we work extensively on addressing the negative ecological and social outcomes of policy and actions that are justified as being beneficial to the global climate, yet carry with them risks and threats to public health and natural resources.

Biofuelwatch is also a member of the steering committee of the Hands Off Mother Earth (HOME) Alliance. The HOME Alliance<sup>2</sup> is an inclusive alliance of civil-society groups, Indigenous Peoples' Organizations (IPOs), human rights, grassroots, climate justice and feminist groups and advocates that oppose and work to reject all forms of **geoengineering** – the large-scale technological manipulation of the Earth's systems and climate – as a false solution and a dangerous distraction to the climate and biodiversity crises.

Though our expertise is in many instances by the common hand rails of bioenergy issues strictly related to land-based ecosystems, land-based technologies, and land-based climate and energy policy development, our active role in the global HOME Alliance has led us to learn in detail about a wide array of dangerous speculative marine and atmospheric geoengineering technologies, and to engage in numerous local, regional, national and international instances on these matters.

---

<sup>1</sup> <http://www.biofuelwatch.org.uk/>

<sup>2</sup> <https://handsoffmotherearth.org/>

It is from that base of grassroots, place-based and international advocacy for climate justice that this brief letter is provided by our organization as comment on the Public Workshop on Carbon Capture, Removal, Utilization and Storage Program (SB 905) (here to referred to as the Workshop)<sup>3</sup> that was hosted by the California Air Resources Board (CARB) on February 27, 2025 to ostensibly meet informational and public engagement needs for the implementation of SB 905<sup>4</sup>.

### ***CARB Continues to Promote Geoengineering but Won't Say the Word Out Loud***

Considering the threats and dangers embedded in the climate altering technologies that CARB promoted in this workshop we are compelled to begin this letter with a discussion of the definitions at play. After all this time CARB still refuses to publicly affirm the real-world fact that these climate intervention technologies qualify as ***geoengineering***. This failure to recognize common vocabulary for the field is out of touch with the way these matters are discussed in international fora.

To advance this discussion we ONCE AGAIN want to bring attention to the ***Carnegie Climate Governance Initiative***<sup>5</sup>. Considering as well that CARB staff have made specific reference to the questions of governance of these speculative technologies, we think that bringing attention to already existing high profile efforts regarding governance of these matters can help transparently illuminate what is at hand.

In particular, whether one fully agrees (or not) with the agenda of the Carnegie Climate Governance Initiative (C2G), the entity has become a reference point for these issues. The mission of the Initiative is described on their website: "C2G seeks to catalyze the creation of effective governance for climate-altering technologies, in particular for solar radiation modification and large-scale carbon dioxide removal."<sup>6</sup>

To further the discussion C2G also includes a glossary on their website, and within that glossary is contained a description of geoengineering<sup>7</sup> that includes carbon dioxide removal (CDR).

#### **Geoengineering**

The deliberate large-scale manipulation of the planetary environment to counteract **anthropogenic climate change** (Shepherd, 2009). Also known as **climate engineering**. Theoretical approaches would include the use of **carbon dioxide removal** and **solar radiation modification** or other **climate-altering techniques**.

Whether or not ***geoengineering*** is the exact word that best describes the technologies at hand, the fact that this is an open topic for discussion has been ignored

---

<sup>3</sup> <https://ww2.arb.ca.gov/events/public-workshop-carbon-capture-removal-utilization-and-storage-program-sb-905>

<sup>4</sup> [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220SB905](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB905)

<sup>5</sup> <https://www.c2g2.net/>

<sup>6</sup> <https://www.c2g2.net/c2g-mission/>

<sup>7</sup> <https://www.c2g2.net/glossary/>

and obfuscated by CARB repeatedly, including during the recent Workshop. This is not a small detail. There is no avoiding the reality that many of the technologies discussed and elevated during the Workshop were nothing short of ‘climate-altering techniques’ that fall under the broad umbrella of ***geoengineering.***

To be clear, C2G is not a central of conspiracy theory hyperbole; regardless if one is ideologically aligned with C2G (or not) there is no question that this is one of the more developed entities for discussing the governance of these technologies.

For CARB to continue to fail to describe these dynamics is a failure of the state agency to be upfront and transparent with the residents of the state about what is at stake, and about what is being proposed. We find it of great concern that CARB staff responsible for this workshop did not adequately define this rapidly evolving field, which carries with it tremendous risks and threats to public health and the environment. We insist that CARB take full responsibility for the promotion of climate intervention technologies as a response to climate change and call these mechanisms for what they are: ***geoengineering.***

In that vein, we think it is noteworthy that CARB has now for several years been promoting geoengineering, even if the agency is not willing to call it by name. This certainly carries with it some serious reputational risk.

### ***CARB Promotes Technologies That Represent Threats to our Oceans***

Our organization is extremely concerned by CARB promoting marine geoengineering technologies and carbon trading in the Workshop while failing to offer California residents any information about likely harms resulting from these technologies, or the implications of integrating them into markets-based mechanisms.

That CARB put Marine Carbon Dioxide Removal (mCDR) at the forefront of the workshop panels yet failed to publicly recognize that marine geoengineering carries significant risk for ocean ecosystems and human livelihoods was terrifying.

It is important to note that mCDR was never mentioned in SB 905; though we recognize that SB 905 is very broad and casts a wide net for CDR writ large, marine environments are not specifically mentioned in the bill. That CARB has extended their interest from land-based CDR now to mCDR under the auspices of SB 905 – yet then failed to offer warnings about what is at stake – was problematic.

Increasingly, our oceans are at threat not only from the impacts of over exploitation and the climate crisis, but also from misguided attempts to manipulate earth systems with the aim of countering some of the symptoms of climate change. The oceans’ vastness, vulnerability and comparatively pristine nature are still poorly understood, but they sustain life on earth and are our greatest ally in the fight against climate change: to misuse them in this way presents incalculable uncertainty and risk, and

the effects of marine geoengineering on them are unpredictable<sup>8</sup>.

It is also important to note the potential for extreme social, cultural and economic impacts, especially on coastal communities that depend on healthy oceans for their livelihoods. Coastal and indigenous communities could face unintended consequences from disruptions resulting from marine geoengineering experiments and project implementation. Nevertheless, Indigenous Peoples' territories continue to be targeted by marine geoengineering researchers. The Workshop failed completely to address any of these issues.

### ***Marine Geoengineering is of International Concern***

Biofuelwatch works closely with the Center for International Environmental Law<sup>9</sup> (CIEL) as partners in the HOME Alliance. With HOME we have been active at proceedings of the Intergovernmental Panel on Climate Change (IPCC), before the Convention on Biological Diversity (CBD), and during civil society engagement processes under the United Nations Framework Convention on Climate Change (UNFCCC), amongst other spaces.

Here is what our partners at CIEL have to offer as words of caution regarding risky and unproven marine geoengineering technologies<sup>10</sup>:

1. **Marine geoengineering will not eliminate the causes of the climate crisis or ocean acidification.** These technologies do nothing to reduce or mitigate greenhouse gas emissions, which are the major drivers behind climate change.
2. **No marine carbon dioxide removal techniques have been proven effective** in removing and storing CO<sub>2</sub> in the long term, and some could undermine the ocean's ability to store carbon.
3. **Geoengineering creates a moral hazard**, which is when companies and people feel safe to continue harmful actions (like burning fossil fuels) because they think someone or something else will clean up the consequences sometime in the future.
4. **Experiments involving ocean alkalinity, iron fertilization, and artificial upwelling can lead to ocean acidification.** A more acidic ocean is harmful because it weakens the shells and skeletons of corals, shellfish, and plankton, which are essential to marine food chains and for overall ocean health.
5. **Geoengineering has been restricted by a de facto moratorium**, or a permanent legal pause, under the Convention on Biological Diversity since 2010.
6. **Marine geoengineering, like all geoengineering, risks violating the rights of people everywhere**, including the right to health, to food, and to clean water.

---

<sup>8</sup> <https://handsoffmotherearth.org/resources/home-alliance-statement-on-marine-geoengineering-experiments/>

<sup>9</sup> <https://www.ciel.org/>

<sup>10</sup> [http://act.ciel.org/site/MessageViewer?em\\_id=10025](http://act.ciel.org/site/MessageViewer?em_id=10025)

7. **If deployed, these technologies would need to be carried out at a massive international scale, which has never been done before.** For example, to capture 0.2% of emissions with seaweed would require the equivalent of growing a 100-meter belt around 63% of the world's coastlines.
8. **We won't know the true impacts of marine geoengineering until it is deployed at a planetary scale,** at which point we will be locked into potentially irreversible effects, turning our planet into a lab experiment.
9. **Marine geoengineering will have transboundary effects.** This means that **everyone will feel its impacts** regardless of how close they are to a coast.
10. **We cannot build our climate solutions on speculative and risky technologies.** The only reliable path is a full, fast, fair, funded phase out of fossil fuels.

Despite responsibility as facilitators of a Workshop that would be by definition meant to protect and empower the public interest, CARB staff completely failed to offer any framing or words of warning about the material being presented. CARB instead unquestionably elevated dangerous speculative technologies during the workshop as though such approaches are beneficial to society and the environment, regardless of abundant evidence<sup>11</sup> that demonstrates otherwise. Compounding the problem, CARB then decided to also link the promotion of these speculative technologies directly with carbon markets advocates, suggesting that emissions trading would be a motor for scaling up of these approaches. This was a particularly brazen move considering the phenomenal amount of recent press exposing serious problems with offsets, developments that CARB has tried to downplay, ignore or, as in this instance, erase.

Considering the stated commitment of CARB to science and environmental justice the one-sided design of the panels was a dubious tactic, to use a gentle word. Market-based mechanisms and carbon offsetting are significant drivers of the perpetuation of harms in already vulnerable communities and biodiversity. This workshop only supported leaning in harder on already demonstrably inadequate and dangerous approaches to responding to climate change.

### ***Conclusion***

Our organization remains attentive to these discussions. We will remain engaged. Thank you for your attention to these comments and we anticipate greater discussion in the future regarding the concerns we have described in this letter.

Sincerely,



Gary Graham Hughes

Co-Director / Americas Program Coordinator – Biofuelwatch

Email: [garyhughes.bfw@gmail.com](mailto:garyhughes.bfw@gmail.com) / Mobile: +1-707-223-5434

---

<sup>11</sup> <https://www.nature.com/articles/s44183-024-00075-5>