



June 2, 2026

Lauren Sanchez, Chair
Members of the Board
Dr. Steven S. Cliff, Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Submitted electronically via <https://ww2.arb.ca.gov/public-comments/concepts-potential-regulations-establishing-carbon-capture-removals-utilization-and>

RE: Concepts for Potential Regulations for Establishing the Carbon Capture, Removals, Utilization and Storage Program

Esteemed Chair Sanchez, board members, Dr. Cliff:

Biofuelwatch¹ 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 Alliance² 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 from real pathways towards addressing the climate and biodiversity crises.

Though our expertise is in many instances guided 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

¹ <http://www.biofuelwatch.org.uk/>

² <https://handsoffmotherearth.org/>

technologies, and to engage in numerous local, regional, national and international instances on these matters.

It is from that base of **grassroots, place-based and international advocacy for climate justice** that this letter is provided by our organization to the California Air Resources Board (CARB) as comment on the recently published paper titled Concepts for Potential Regulations for Establishing the Carbon Capture, Removals, Utilization and Storage Program (Concepts Paper)³.

We encourage CARB to take a much more restrictive and skeptical approach to the technologies being included under the umbrella of the Concepts Paper. The agency has been far too loose and too free with the legislative direction provided by SB 905⁴, paving the way for the normalization, pursuit and development of a wide array of technological approaches to addressing climate change that promise a whole host of environmental, economic and public health harms⁵ – and that were never specified within the SB 905 legislation.

Definitions: CARB Is Promoting Geoengineering - But After All These Years Still Cannot Say the Word Out Loud

To be clear, Carbon Dioxide Removal (CDR) is, by definition, **geoengineering**. Yet CARB fails to be transparent and call **geoengineering** by name.

CARB has for several years supported -- and again here in the Concepts Paper is supporting -- a pivot to **geoengineering** -- but no one in Sacramento will say the word out loud.

The definitions that open the Concepts Paper both expose CARB for pursuing **geoengineering**, and expose the fact that CARB has not been transparent about the definitional realities of the technologies that are being promoted.

By failing to be transparent in describing CDR as **geoengineering** CARB is hiding from the public the true essence of the technologies being celebrated.

Geoengineering has long been a technical term used in international climate change discourse, despite the irresponsibility of California climate authorities in pretending that the word does not exist.

In 2009 the UK Royal Society offered this definition of **geoengineering**:

“Deliberate large-scale manipulation of the planetary environment to counteract anthropogenic climate change.”

³ <https://ww2.arb.ca.gov/resources/documents/concepts-potential-regulations>

⁴ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB905

⁵ <https://www.climatechangenews.com/2023/05/25/un-advises-against-carbon-offsets-for-carbon-removal-technologies/>

CDR as included in the Concepts Paper fully fits within this definition.

The United States Environmental Protection Agency (US EPA) also describes CDR as **geoengineering**, with a particular focus on Marine Carbon Dioxide Removal (mCDR)⁶.

CARB includes mCDR in the list of definitions in the Concepts Paper, but by failing to name mCDR as **marine geoengineering** CARB is out of step with common discourse about such speculative technologies.

The US EPA definition reads:

“Geoengineering includes a range of deliberate and large-scale interventions in Earth’s natural systems aimed at countering climate change impacts. This includes, but is not limited to, solar radiation management, carbon dioxide removal, and other technologies designed to alter atmospheric, oceanic, or terrestrial processes. These interventions often prioritize symptomatic solutions over addressing the root causes of climate change, raising significant ethical and environmental concerns.”

Considering the threats and dangers embedded in the climate altering technologies that CARB has promoted during the SB 905 rule making process, and continues to promote in the Concepts Paper, we are compelled to include in this letter a discussion of the definitions at play. To advance this discussion we want to bring attention to the **Carnegie Climate Governance Initiative**⁷.

Considering that the point of this process underpinning the Concepts Paper is developing regulations (i.e. governance) under the auspices of SB 905 we think that bringing attention to already existing efforts regarding governance of these matters can help transparently illuminate what is at hand.

In particular, whether one fully agrees with the agenda of the Carnegie Climate Governance Initiative (C2G), the entity has become a reference point for governance of **geoengineering**.

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.”⁸

To further the discussion C2G also includes a glossary on their website, and within that glossary is contained a description of geoengineering⁹ that includes carbon dioxide removal (CDR).

⁶ <https://www.epa.gov/geoengineering/about-geoengineering>

⁷ <https://www.c2g2.net/>

⁸ <https://www.c2g2.net/c2g-mission/>

⁹ <https://www.c2g2.net/glossary/>

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**.

Regardless of the clear inclusion of CDR within the class of climate-altering techniques that should be considered **geoengineering**, CARB has thus far refused to make any public reference to the fact that the speculative technologies of CDR fall well within the boundaries of what is recognized as **geoengineering**.

Whether or not this is the exact word that best describes the technologies at hand, the fact that this is an open topic for discussion has been obfuscated by CARB for years now. For instance, during the development of the 2022 Scoping Plan CDR was euphemistically entitled “engineered carbon removal” – but **geoengineering** was never mentioned by name.

This is not a small detail. Whether it be called ‘mechanical sequestration,’ ‘artificial sequestration,’ ‘engineered carbon removal,’ or ‘carbon dioxide removal’ there is no avoiding the reality that these are ‘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 **geoengineering** technologies. Developing regulations is by definition governance. Why is CARB failing to adhere to international standards of governance in adequately describing the technologies that the agency has been aggressively promoting?

For CARB to fail to describe these dynamics is a failure of the state government to be upfront and transparent with the residents of the state about what is at stake. This is not the first time that our organization brings these issues to the attention of CARB. Nevertheless, CARB continues to refuse to tell residents of the state exactly what it is that the agency is promoting as a response to climate change.

We find it of great concern that CARB staff responsible for the Concepts Paper have not adequately defined 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 dangerous speculative technologies as a response to climate change and call these mechanisms for what they are: **geoengineering**.

Most Recent Intergovernmental Panel on Climate Change Climate Science Report Exposes Disputed Effectiveness of Carbon Dioxide Removal

To put the Concepts Paper in the appropriate scientific context it is important to visit the most recent version of the review of physical science of climate change by the International Panel on Climate Change (IPCC)¹⁰. Officially this report is the Working Group I contribution to the Sixth Assessment Report on the Physical Science Basis of climate change¹¹.

It is this report that affirms unequivocally that climate change is fast occurring due to the increasing concentration of greenhouse gases in the atmosphere.

Once again, the scientific consensus was made clear that human economic activities, primarily the extraction and burning of fossil fuels, but also land use change such as deforestation, are mobilizing carbon stocks that had long been locked away.

The stark realities presented by the report are not a surprise to us who make up the team at Biofuelwatch. In that sense, we clearly understand what is at stake.

Unfortunately, from our experience, some of the most alarming developments surrounding the report, and the IPCC more broadly, are in regards to how the circumstances of global ecological and climate breakdown are being exploited by commercial interests to perpetuate activities that are at the root of the problem, not solutions.

This is manifested in the increasing urgency being expressed by industrial operators and government officials for pursuing technology for ostensibly removing carbon from the atmosphere, whether it be with futuristic 'carbon vacuums' (Direct Air Capture - DAC) or through the planting of massive exotic tree species monoculture plantations for pursuing bioenergy with carbon capture and sequestration (BECCS).

These urgent claims by a select group of stakeholders that the IPCC concludes that the only option remaining to humanity is to pursue technical fixes to the climate problem merit close scrutiny. A close look at the report reveals that the effectiveness of these mechanisms, many of which do not yet even exist, is actually a matter of scientific dispute.

While carbon capture interests are eager to publicize how the latest IPCC report is explicit in identifying the field of carbon removal as one that merits scientific assessment, they are not being transparent about the uncertainties, risks and threats that the report communicates about CDR.

In fact, there is a section of the report itself that specifically addresses the question of the "Removal Effectiveness of CDR."¹²

¹⁰ <https://www.ipcc.ch/report/ar6/wg1/>

¹¹ <https://www.ipcc.ch/report/ar6/wg1/#SPM>

¹² See p. 104 (5.6.2.1.3) 'Removal Effectiveness of CDR' at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_05.pdf

Among the scientific facts that CDR proponents are not being forthright in describing to an increasingly concerned public is that there is an intimate relationship between the atmosphere, the ocean, and the land sector, and that – if indeed it were ever possible to remove carbon from the atmosphere – the effectiveness of that carbon removal for reducing atmospheric concentrations of greenhouse gases would be impacted by outgassing from the ocean.

This complex relationship regarding the *asymmetries* in the climate system is as yet poorly understood, and is highly dependent on time and emissions background factors, but there is **high confidence** from the IPCC that such out gassing into the atmosphere from the ocean and, most likely, the land sector would occur in the event of successful carbon removal from the atmosphere, if such technologies were ever to come to fruition.

Along the lines of exploring these *asymmetries* in the global carbon cycle is the IPCC conclusion that **“an emission of CO2 into the atmosphere is more effective at raising atmospheric CO2 than an equivalent CO2 removal is at lowering it.”**

That is to say that the science shows that emissions do more climate damage than carbon removals can repair.

It is important to recognize that these climate science fundamentals are addressing possible carbon cycle responses to carbon removal in models that assume a best-case scenario for the technologies, with no spills, accidents, mishaps or any other of a multitude of unexpected factors might occur.

None of this science is being transparently addressed by CARB in the context of the ongoing promotion of speculative climate technologies.

The IPCC report itself in the section on CDR does actually include details on the possible negative impacts of these mechanisms — information that proponents of such geoengineering techniques are reluctant to publicize.

For instance, for BECCS specifically the IPCC report includes these informational items:

—“wood based BECCS may not be carbon negative in the first decades, initially emitting more CO2 than sequestering”

—“BECCS has several trade-offs to deal with, including possible threats to water supply and soil nutrient deficiencies”

—“Deployment of BECCS at the scales envisioned by many 1.5 - 2.0 mitigation scenarios could threaten biodiversity”

—“Additional risks and side effects are related to geologic carbon storage”

—“Highest co-benefits are obtained with methods that seek to restore natural ecosystems and improve soil carbon sequestration while highest trade off possibilities occurs for re/afforestation with monocultures and BECCS”

Another very interesting item that is buried in the report that has not received much media coverage is the Frequently Asked Question (p. 120 FAQ 5.3) of “Could climate change be reversed by removing carbon dioxide from the atmosphere?¹³”

The ambiguous answer of the IPCC to this question is perhaps best characterized as a caveat loaded “maybe?”

Among the caveats however are these statements from the IPCC:

—“It should be noted that CO2 removal technologies are not yet ready or are unable to achieve the scale of removal that would be required to compensate for current levels of emissions, and most have undesired side effects.”

—“a decline in atmospheric CO2 as a result of net negative emissions would not lead to immediate reversal of all climate change trends”

—“temporary overshoot would result in additional climate changes compared to a scenario that reaches the goal without overshoot”

—“approaches capable of large-scale removal of CO2 are still in the state of research and development or unproven at the scales of deployment necessary to achieve a net reduction in atmospheric CO2 levels. CO2 removal approaches, particularly those deployed on land, can have undesired side effects on water, food production and biodiversity.”

All of these dynamics merit serious transparent and evidence-based discussion by CARB to inform rule making that will serve communities and the environment, as opposed to making the public health, climate and biodiversity situation worse.

Unfortunately, CARB tends to downplay or ignore documented concerns about speculative climate technologies, and has on many instances repeated the mythical propaganda line that ‘the IPCC says that the only way to respond to climate change is with carbon removals.’

Nothing could be further from the truth.

¹³ See p. 120 FAQ 5.3 ‘Could climate change be reversed by removing carbon dioxide from the atmosphere?’ at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_05.pdf

Dangerous Speculative Technologies

As an example of a dangerous speculative technology that CARB has promoted in the Concepts Paper, as well as having included in the 2022 Scoping Plan, is **Enhanced Weathering**. The Concepts Paper makes an explicit reference to Enhanced Weathering (EW), but it also makes reference to carbon mineralization, which is the term used in the 2022 Scoping Plan.

Enhanced Weathering (or carbon mineralization) is by definition geoengineering¹⁴.

Unfortunately, despite the prominent role of EW in CARB CDR discourse, never in any instance where CARB has made reference to EW as a CDR technology to pursue for development has the agency even tried to offer a description of what EW might be and what it would require, much less to offer any information on known harms that would be associated with the scaling up of this technology in a manner that might have any impact on the global climate.

Perhaps we can help provide the information that CARB refuses to provide. In summary, EW techniques are a set of theoretical proposals to remove carbon dioxide by spreading large quantities of finely ground rock minerals on to extensive land areas, beaches, or even the sea surface. EW aims to mimic and accelerate the natural weathering process of silicate and carbonate rocks.

Some proposals involve the utilization of mining wastes, mine tailings or industrial by-products from iron and steel production.

If EW were to be deployed on a large enough scale to remove significant amounts of carbon dioxide from the atmosphere, there would need to be an exponential increase in the scale of global mining operations, which would have devastating effects on communities and ecosystems around the world, and cause large amounts of greenhouse gas emissions.

Some estimates have suggested that establishing an EW sector at sufficient scale to have an impact on the global climate system would require the development of a completely new mining supply chain on par with existing iron ore mining operations.

The risks associated with EW also include the release of substances with harmful effects even in small doses, such as nickel, chromium or cadmium. If mining and other industrial waste products are considered for EW, they are likely to contain substances such as heavy metals. EW may also provoke hydrological changes and pollution in water bodies through leaching or erosion.

Clearly EW presents extensive threats and risks to public health and the environment. Yet CARB has routinely offered up EW as a CDR technology that merits research and development without once offering a word of caution.

¹⁴ <https://www.geoengineeringmonitor.org/technologies/enhanced-weathering>

Such a blasé attitude to informing the public about likely harms associated with dangerous speculative technologies is extremely worrisome and problematic. Note that EW was not mentioned in any form in the SB 905 legislation.

We encourage CARB to drop EW from consideration under the SB 905 rulemaking and more broadly stop promoting EW as a response to climate change. At the very least CARB needs to be transparent with the residents of the state and clarify that speculative technologies such as EW are extremely controversial due to the threats and harm they represent to public health and the environment.

The inclusion of EW in the Concepts Paper, despite such technologies not being included in SB 905, is problematic in the same way that the inclusion of **marine geoengineering** in the Concepts Paper is an over reach on the part of CARB to pivot further to dangerous speculative technologies as a response to climate change.

CARB Promotes Exploring and Developing Technologies that Represent Threats to Our Oceans

Our organization is extremely concerned by the Concepts Paper expressing an explicit commitment to advancing dangerous marine geoengineering technologies.

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 unpredictable¹⁵.

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 Concepts Paper fails to provide a framework to adequately address these issues from these angles.

Marine Geoengineering is of International Concern

Biofuelwatch works closely with the Center for International Environmental Law¹⁶ (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.

¹⁵ <https://handsoffmotherearth.org/resources/home-alliance-statement-on-marine-geoengineering-experiments/>

¹⁶ <https://www.ciel.org/>

Here is what our partners at CIEL have to offer as words of caution regarding risky and unproven marine geoengineering technologies¹⁷:

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 CO₂ 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.
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.

Mitigation Deterrence Must Be Addressed

One of the concerns with the promotion of 'carbon dioxide removal' is due to the amount of resources and political energy that can be focused on the development of technologies that may not achieve their stated goals, and that carry with them extensive threats to water and biodiversity resources, as well as presenting a host of public health and safety concerns.

When this political energy is focused on the hypothetical future removal of carbon dioxide from the atmosphere as opposed to the direct emissions reductions that would be the foundation of any science and equity-based plan to respond to climate change it raises questions of **mitigation deterrence**.

¹⁷ http://act.ciel.org/site/MessageViewer?em_id=10025

Mitigation deterrence is referred to as *the risks of negative emissions or carbon removal technologies delaying or deterring climate mitigation activities*. This is an active field of academic and policy study¹⁸. These dynamics must be addressed by CARB, and in fact they merit being elevated to being the primary topic of a workshop and a Concepts Paper, with the same detail of discussion as has gone into the SB 905 rule making process.

Carbon Dioxide Removal Is Futile and Is Not a Current Climate Solution

As another sobering reality check about the limitations of carbon removal we reference an article that was published by an academic that by many measures of the sector should be considered a proponent of CDR. In the article, titled “*Carbon dioxide removal is not a current climate solution – we need to change the narrative*,”¹⁹ the author uses a time machine metaphor juxtaposed with global carbon budgets to demonstrate that CDR is largely a futile enterprise until society has eliminated its polluting activities. The article includes this passage:

“We have to shift the narrative as a matter of urgency. Money is going to flood into climate solutions over the next few years, and we need to direct it well. We must stop talking about deploying CDR as a solution today, when emissions remain high — as if it somehow replaces radical, immediate emission cuts.”

Considering the tens of millions of dollars at stake in the rule making for SB 905, this is an incredibly relevant article, and CARB leadership would be served by giving it a read in the context of this Concepts Paper. We strongly caution against any policy making that essentially exaggerates the promise of CDR technology as a climate solution. We need to direct available funds to reduce emissions at the source, not hope that some new invention can deal with the pollution later.

The Concepts Paper Ignores Existing International Environmental Agreements

We alert CARB leadership to the fact that the speculative CDR technologies promoted in the Concepts Paper are highly controversial on a global level. We insist that CARB refrain from the promotion of geoengineering until adequate legal and political due diligence can be completed.

We include two examples here from the United Nations International Maritime Organization (IMO) and the Convention on Biological Diversity (CBD) that describe how the speculative technologies that the Concepts Paper aspires to advance have been identified in international environmental deliberations as meriting high-level concerns, including a *de facto* moratorium.

The **International Maritime Organization** (IMO) specifically describes marine geoengineering²⁰ in these terms:

Marine geoengineering is defined as “a deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change

¹⁸ <http://wp.lancs.ac.uk/amdeg/>

¹⁹ <https://www.nature.com/articles/d41586-023-00953-x>

²⁰ <https://www.imo.org/en/OurWork/Environment/Pages/geoengineering-Default.aspx>

and/or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long-lasting or severe".

There is growing interest in marine geoengineering techniques and their potential to cause pollution or other adverse effects on the marine environment. The London Protocol /London Convention parties identify four techniques for priority evaluation:

- enhancing ocean alkalinity (CDR);*
- macroalgae cultivation and other biomass for sequestration including artificial upwelling (CDR);*
- marine cloud brightening (SRM); and*
- microbubbles/reflective particles/material (SRM).*

There are several lessons that the concerned public and stakeholders engaged in the SB 905 rulemaking process might glean from considering the way these issues are being discussed at the IMO; the simplest is that these are very controversial issues that have been attracting the attention of scientists and activists worldwide.

Also, there is an intimate relationship between CDR and Solar Radiation Management (SRM), a relationship that exists in the real world of international climate politics despite the aversion of policy makers in Sacramento to publicly admit that they are discussing and promoting geoengineering. Is aggressive pursuit of commercial scale CDR indicating that SRM legislative projects are just around the corner? We know from reporting in Politico that CARB is showing explicit interest in supporting research of SRM technologies²¹. Politico at least made direct reference in that coverage to “geoengineering research that has become politically polarizing across the country.” Nevertheless, CARB still fails to transparently communicate the agency pivot to geoengineering, nor publicly recognize the controversy. Would it not behoove CARB and other regulators in the state to discuss these ramifications transparently before moving forward with a program to advance, commercialize and monetize CDR? It would certainly better serve the residents of the state if there were transparent discussion of these matters.

Despite these urgent questions about geoengineering more broadly, the Concepts Paper makes no reference to the controversy and concern surrounding the development of mCDR technologies that the IMO has determined to threaten long-term deleterious effects on the ocean environment and the communities that depend on it.

For more information about the IMO deliberations on geoengineering the leadership of CARB should refer to the statement that was adopted by the 44th Consultative Meeting of Contracting Parties to the London Convention and the 17th Meeting of Contracting Parties to the London

²¹ <https://www.politico.com/newsletters/california-climate/2025/09/26/can-california-reshape-the-wests-energy-markets-this-man-is-trying-00583370>

Protocol (LC 44/LP 17), which met at the International Maritime Organization (IMO) Headquarters from 3-7 October 2022²².

The leadership at CARB should also be aware that the November 2024 Conference of Parties of the **United Nations Convention on Biological Diversity** (CBD) closed with a reaffirmation of an historic decision on precautions on geoengineering and reaffirming a call to a global moratorium on geoengineering.

The specific reference²³ reads:

Decision [CBD COP 16/22](#) on Biodiversity and Climate Change re geoengineering
6. *Reaffirms* decision [IX/16 C](#) on ocean fertilization, paragraph 8 (w) of decision [X/33](#) on biodiversity and climate change and decisions [XI/20](#) and [XIII/14](#) of 9 December 2016 on climate-related geoengineering, and urges Parties, and encourages other Governments, to ensure their implementation.

These are very serious dynamics that CARB leadership must take into consideration. It is relevant to note that the State of California is an observer party to the CBD, a fact that has been repeatedly celebrated as an example of California's global environmental leadership²⁴. There is no question that ocean fertilization is an mCDR technology subject to this *de facto* moratorium, with mCDR being specifically mentioned in the Concepts Paper.

To emphasize, the Parties to the CBD are **urged** to ensure the **implementation** of the decision, not defy it.

In an age where international relations have been damaged by authoritarian trends and unilateral action this is a moment where CARB, other state regulatory agencies, and the Governor's Office must stand up for the protection of the integrity of international environmental deliberations.

Considering the above, it would simply be irresponsible for CARB to continue promoting marine geoengineering under the auspices of rulemaking for SB 905.

Conclusion

Geoengineering does nothing to tackle the root causes of the triple planetary crisis (climate change, biodiversity loss and toxic pollution), and could have profound, unpredictable, and potentially irreversible effects on the environment and public health. Impossible to fully test for the intended impact on the climate except through large-scale deployment, geoengineering effectively proposes turning the Earth into a laboratory, with the risk of undermining the human rights of potentially billions of people for generations to come.

²² <https://www.imo.org/en/MediaCentre/PressBriefings/pages/Marine-geoengineering.aspx>

²³ <https://www.cbd.int/doc/decisions/cop-16/cop-16-dec-22-en.pdf>

²⁴ <https://resources.ca.gov/Newsroom/Page-Content/News-List/Advance-Ambitious-Agenda>

These technologies will always remain unproven in the real world until they are deployed at scale, at which point it will be too late to remedy any harms. Just because such technologies ‘work’ in a model, or at a micro-scale in the lab or in the sky, or sound innovative in a CARB workshop panel, does not mean they will cool climate safely in the real world, without unwanted side-effects. There is no possible way that research can demonstrate that the technologies are safe, successful or reversible. Research might be good for climate scientists and environmental engineers who need more money for their labs, but it is not good for either people or planet.

CARB must first transparently inform the public that the dangerous speculative technologies that the agency is promoting qualify as **geoengineering**. Then CARB must respect international environmental agreements and support the *de facto* moratorium on the pursuit of these technologies that exists under the CBD. Then, in follow up to that that important step in affirming international environmental agreements, CARB must refrain from promoting geoengineering under the auspices of rulemaking for SB 905.

Thank you for your attention to this letter.

Sincerely,

A handwritten signature in black ink that reads "Gary Graham Hughes". The signature is written in a cursive, flowing style.

Gary Graham Hughes, Co-Director / Americas Program Coordinator, Biofuelwatch
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