



May 22, 2023

Senator Toni G. Atkins
Senate President Pro Tempore
California State Capitol
1201 O Street, Suite 8518
Sacramento, CA. 98814

Submitted electronically via Position Letter Portal:
<https://calegislation.lc.ca.gov/Advocates/faces/index.xhtml>

Re: SB 308 (OPPOSE)

Esteemed Senate President Pro Tempore, esteemed Senators:

Our organization Biofuelwatch¹ offers this position letter to the Senate for your consideration. Biofuelwatch 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 specifically of the forest-based biomass industry. Our organization has also been a global leader in grassroots organizing for communicating community concerns regarding the climate risks and human rights harms embedded in the expansion of bioenergy crops, the cutting of native forests for bioenergy purposes, and the substitution of native ecosystems with deadly monoculture exotic tree species plantations. We also participate on the steering committee of the global Hands Off Mother Earth (HOME!) Alliance organizing international resistance² to geoengineering, and we are members of the Global Forest Coalition.³ Of particular interest to this legislative body would be our December 2021 report titled “*Carbon Capture or Captured Futures? Fossil Fuel and Bioenergy Controls California ‘Getting to Neutral’ Climate Policy*”.⁴

This letter, with slight modifications from what was submitted to Senate Environmental Quality, communicates our **OPPOSE** position on SB 308 – The Carbon Dioxide Removal Market Development Act.⁵

¹ <https://www.biofuelwatch.org.uk/>

² <https://www.realsolutions-not-netzero.org/ipcc-phase-out-fossils-no-technofixes>

³ <https://globalforestcoalition.org/>

⁴ <https://www.biofuelwatch.org.uk/2021/carbon-capture-or-captured-futures-new-report-from-biofuelwatch-on-california-climate-politics/>

⁵ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240SB308

Pursuit of a Negative Emissions Market in California is a Dangerous Distraction

California does not need a new market mechanism for regulating the climate pollution from stationary sources. California is already saddled by a number of market mechanisms that have not succeeded in reducing real world emissions, and that have instead created the risk of fossil fuel lock in, while also expanding the reliance on high carbon bioenergy. Whether it be emissions reduction trading at the air district level, or the markets-based compliance mechanism (cap-and-trade) and Low Carbon Fuel Standard (LCFS) at the state level, California is already hamstrung by the institutionalization of markets-based schemes that are not achieving their stated emissions reductions objectives. The last thing the state needs right now is a market explicitly designed to incentivize speculative technologies that carry with them a whole host of threats to biodiversity, water resources, public health and community safety. What's more, mechanisms to incentivize these energy and materials intensive technologies already exist, such as the credit pathway for Direct Air Capture (DAC) that was amended into the LCFS in 2019. Interestingly, no applications have ever been submitted for that pathway.⁶ To that end, SB 308 is redundant. The fact is that California does not need a new market mechanism on top of existing market mechanisms that are only making the overall climate and public health situation worse. What California legislators need to do is to pursue regulations that result in emissions reductions at the source, from all sources. We must no longer be deceived by the erroneous assumptions that suggest that climate pollution can be cleaned up by another activity, in another place, at another time.

Pivot to Speculative Technologies Is a Pivot to Geoengineering—But California Authorities and Elected Officials Won't Say the Word Out Loud

Considering the threats and dangers embedded in the climate altering technologies that the bill is designed to promote, incentivize, and commercialize, we are compelled to begin this letter with a discussion of the definitions at play. To advance this discussion we want to bring attention to the ***Carnegie Climate Governance Initiative***.⁷ Considering as well that the legislatures main role is in regard to governance writ large, we think that bringing attention to already existing efforts regarding governance of these matters can help transparently illuminate what is at stake.

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."⁸

⁶ <https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-credit-generation-opportunities>

⁷ <https://www.c2g2.net/>

⁸ <https://www.c2g2.net/c2g-mission/>

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).

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**.

The clear inclusion by entities dedicated by name to the governance of these matters of CDR within the class of climate-altering techniques that could be considered “geoengineering” should be taken seriously by members of the legislature.

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 repeatedly obfuscated over the last several years in treatment of these speculative technologies by legislators, as well as by the California Air Resources Board (CARB) during the development of the 2022 Scoping Plan Update (SPU). On repeated occasions during the SPU process what the rest of the world is referring to as “geoengineering” was euphemistically entitled “engineered carbon removal.” This is not a small detail. Whether it be called ‘climate intervention,’¹⁰ ‘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 source of ‘chemtrail’ 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 climate system engineering technologies.

We find it of concern that the state legislature is not adequately defining and describing this rapidly evolving field, one which is totally dependent on technologies which carry with them tremendous risks and threats to public health and the environment. We insist that the legislature take full responsibility for the promotion of technologies as a response to climate change and call these mechanisms for what they are: **geoengineering**.

⁹ <https://www.c2g2.net/glossary/>

¹⁰ <https://www.agu.org/Share-and-Advocate/Share/Polymakers/Position-Statements/Climate-Intervention-Requirements>

Mitigation Deterrence Must Be Addressed

A principal concern with the promotion of ‘carbon dioxide removal’ and ‘negative emissions’ as a primary response to climate change is due to the quantity 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**.

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 study.¹¹ These dynamics must be addressed, and in fact they merit being elevated to being the primary topic of legislative hearings.

Asymmetries: The Purported Climate Benefits of Unproven Negative Emissions Technologies Like Direct Air Capture Are Illusory and Disputed

There is a growing body of evidence addressing the possible reactions of the global climate system to the actual removal of carbon dioxide from the atmosphere through as yet unproven at scale technologies such as Direct Air Capture (DAC).

As an example, note the article titled “Asymmetry in the climate-carbon cycle response to positive and negative emissions”¹² in which the assumptions regarding the reaction of the atmosphere to carbon dioxide removal are addressed. The study reveals that the relationship between the ocean, the land sector and the atmosphere is far more complex than the proponents of CDR technologies such as DAC are willing to admit. The conclusion of the article is that asymmetries would increase with the magnitude of the carbon removal, meaning that the climate benefits of carbon removal are significantly reduced. No equivalency exists ton for ton between an emission and a removal. This bill relies on that false equivalency, meaning the bill is not grounded in the best contemporary climate science.

The findings of the study imply that reducing and eliminating emissions will secure a much greater climate benefit than carbon removal through technological means.

Unrealistic Energy and Materials Requirements of Direct Air Capture

We also want to flag the dangerous assumptions about the potential for “direct air capture” (DAC) to be an effective tool for responding to climate change at all, much less an effective tool for responding to climate change in an equitable manner. The

¹¹ <http://wp.lancs.ac.uk/amdeg/>

¹² <https://www.nature.com/articles/s41558-021-01061-2>

massive material and energy requirements of DAC are recognized to undermine any theoretical climate benefit from their development.¹³

The intensity of the energy and material requirements of the technologies being promoted in this bill cannot be understated. Even those studies that could be considered relatively positive about DAC warn of the risks of assuming that DAC could be implemented at scale, but then to find that such objectives are technically unattainable. Other more sober analyses of energy and materials requirements resulted in the conclusion that DAC, even if it were conceivable to pursue at some industrially relevant scale, would be “a significant distraction with negligible contributions to mitigating climate change.”

In short, in our read of the bill and in study of the public and policy discourse on these matters, we believe it is incumbent upon the members of the legislature to look hard at the real-world energy and materials requirements of any DAC program of a scale to actually have an impact on the global climate. It is our assessment that the enormity of these requirements is not being taken adequately into consideration. To fail to address these requirements is to fail to address the biodiversity, land use, public health and indeed public safety considerations of the ripple effect from the pursuit of these as of yet unproven technologies.

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

Just last month an article was published by an academic that by many measures of the sector could 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,*”¹⁴ 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.”

This is an incredibly timely article and the committee members would be served by giving it a read in the context of this bill that essentially grossly exaggerates the promise of CDR technology as a climate solution.

Support for BECCS Raises Serious Concerns

This bill provides unspoken but clear support for the utilization of bioenergy as a climate solution, and indeed makes reference to a vision for “negative emissions technologies” in California that would qualify as support for a Bioenergy with Carbon

¹³ “The Seductive Lure of Direct Air Capture Delays the Clean Energy Transition” at <https://kpfa.org/episode/terra-verde-january-27-2023/>

¹⁴ <https://www.nature.com/articles/d41586-023-00953-x>

Capture and Storage (BECCS) system. We find this to be of tremendous concern. The bill makes inadequate gestures to avoiding environmental harms that would arise from a 'negative emissions system' in California. There are clear indications that this bill presents risks and threats to our forest and river ecosystems and the communities that depend on them. Issues with potential water scarcity relevant to BECCS type strategies are receiving extensive academic attention.¹⁵

The co-founder and co-director of our organization, Rachel Smolker, published an article in 2019 in the Journal of the Society of International Development that goes into detail regarding the threats that a focus on "techno distractions" like BECCS present to the pursuit of real, proven and effective solutions, which include aggressive reform of forestry practices, a strategy that is ripe to pursue in California.

In her article, titled *Bioenergy with Carbon Capture and Sequestration (BECCS): The Distracting Injustice of an Infeasible and Unlikely Technofix*, Ms Smolker is clear in connecting the threats to ecosystems and human rights embedded in the pursuit of BECCS as a climate solution by describing that decision making on these matters is ultimately a decision of deciding "who 'counts' – and who does not."

In November 2022 our organization Biofuelwatch published a report titled *Carbon capture from biomass and waste incineration: Hype vs Reality*¹⁶ which provides substantial evidence regarding the persistent failure of BECCS projects to produce promised results in the context of an ever-increasing political demand from the oil and gas industry to purchase 'removals' to allow their fossil fuel business to continue as usual – essentially exactly what this bill proposes to do. This demonstrates that negative emissions are untenable as a climate solution, and that the CDR narrative embedded in the bill trends towards flat out climate disinformation.

Natural Resource and Water Implications Must Be Analyzed

We believe it is incumbent upon the members of the legislature to look hard at the real-world energy and materials requirements of any BECCS/DAC/CCUS program of a scale to actually have an impact on the global climate. It is our assessment that the enormity of these requirements is not being taken adequately into consideration. To fail to address these requirements is to fail to address the biodiversity, water resource, land use, public health and community safety considerations of these as of yet unproven and speculative technologies.

We are gravely concerned that this bill provides unspoken but clear support for the extensive utilization of woody biomass as a climate solution. The absence of clear recognition of the need for strong environmental and social safeguards for land sector-based climate and energy systems is an indication that this bill presents risks and threats to our forest ecosystems and the communities that depend on them.

¹⁵ <https://www.nature.com/articles/s41467-021-21640-3.pdf>

¹⁶ <https://www.biofuelwatch.org.uk/wp-content/uploads/BECCS-report-2022.pdf>

The public safety and environmental justice implications of the build out of the technologies and infrastructure (CO2 pipelines, etc.) that would be supported by the markets-based mechanism featured in this bill also must be addressed before advancing the legislation. There is nothing benign about an entirely new industrial infrastructure of 'carbon dioxide management' that requires an extensive new CO2 pipeline system and a new generation of industrial sacrifice zones. These very real issues of landscape level impacts, fossil fuel lock-in, social inequity and the threats to public health and safety cannot be ignored nor obfuscated behind technocratic language around the development of markets for 'negative emissions technologies' and 'carbon dioxide removal.'

Conclusion: Reliance on Hi-Tech Solutions for Climate Crisis Perpetuates Racism

In late 2022 the outgoing United Nations racism rapporteur warned that the worlds reliance on hi-tech solutions to the climate and ecological crisis were perpetuating racism.

E. Tendayi Achiume, currently a professor of law at University of California, Los Angeles, was appointed as the UN's special rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance in 2017, becoming the first woman and the first person from southern Africa to fill the role.

Her last interventions before leaving the role highlighted how green solutions that require vast tracts of land and energy are being implemented at the expense of ethnically marginalized groups and Indigenous peoples.¹⁷

It is an imperative that this committee does proper due diligence regarding the social justice, public health, public safety, land, water, energy, ecosystems, biodiversity and materials implications of the technologies and markets mechanisms being celebrated in the bill. As of the submission of this letter the Senate has not adequately weighed the evidence that exposes the dangers and risks of speculative climate intervention technologies.

For these reasons we **OPPOSE** SB 308.

Thank you for your attention to this letter.

Sincerely,



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¹⁷ <https://www.theguardian.com/world/2022/dec/27/reliance-on-high-tech-solutions-to-climate-crisis-perpetuates-racism-says-un-official>