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#CAYouthVsBigOil

Carbon Cycle Institute



October 24, 2022

Honorable Gavin Newsom
 Governor, State of California
 1021 O Street, Suite 9000
 Sacramento, CA 95814

Chair Liane Randolph
 California Air Resources Board
 1001 I Street
 Sacramento, CA 95814

RE: Concerns about Carbon Capture and Storage in Scoping Plan

Dear Governor Newsom, Chair Liane Randolph, and Air Resources Board Members:

We appreciate your recent efforts to improve California’s Scoping Plan, especially the elimination of all new gas plants, doubling vehicle miles traveled reductions, and commitment to an inter-agency planning process for a supply-side phasedown of oil refining in California. California must have a climate roadmap that prioritizes rapid and direct emissions reductions at the source, centers Indigenous Peoples and frontline communities of color, and fully phases out the production, refining, and use of fossil fuels at the pace that science and justice require. Yet, the current plan to increase the state’s reliance on carbon

capture and storage (CCS) undermines that vision and the state's ability to meet its climate goals.^[1] CCS regularly fails to meet its promises, requires high use of electricity and water, puts communities at real risk of harm, and would prolong the production and use of fossil fuels that are driving the climate emergency and polluting communities. **We urge you to adopt a Scoping Plan that rejects the use of CCS for fossil fuel infrastructure such as refineries, gas-fired power plants, and other oil and gas operations.**

A. Fossil fuel and other polluting industries want to use CCS to continue business as usual

The fossil fuel industry is enthusiastic about CCS as a strategy to maintain business as usual because by design, CCS enables an underlying emissions-generating activity to continue. The fossil fuel industry has known about climate change since the late 1970s and has intentionally misled policymakers and the public to maintain their status quo. Congress has just unearthed the oil industry's motives for advancing CCS in a September 14th memo. As stated in the Investigation of Fossil Fuel Industry Disinformation Memo, BP attempted to rebrand itself as "Beyond Petroleum," yet it plans to take advantage of CCS as CCS could "enable the full use of fossil fuels across the energy transition and beyond."^[2] California must not fall for the fossil industry's disinformation about CCS.

B. Rapidly and equitably phasing out fossil fuels must be the centerpiece of California's climate strategy

The Intergovernmental Panel on Climate Change ("IPCC") pathways with the best chance of keeping warming at or below 1.5°C require a rapid phaseout of fossil fuels along with limited carbon dioxide removal ("CDR") by natural sources such as reforestation and enhanced soil remediation.^[3] These pathways make no use of carbon capture and storage (CCS) technologies.^[4] Rather than pouring billions into CCS that locks in fossil fuel infrastructure and perpetuates harmful air pollution, California must plan to transition and decommission these facilities, and instead direct those investments towards clean, reliable, and affordable alternatives.

C. CCS does not work as promised, despite decades of investment

CCS fails to meet its promises and can increase fossil fuel consumption and non-CO₂ pollution from fossil fuel operations, much of which falls on overburdened communities. One recent study found that NO_x, SO₂, and particulate matter pollution increase at the refinery and upstream when CCS is added.^[5] Further, real-world evidence shows that CCS projects repeatedly over promise and under deliver by wide margins. For example, in July 2021, Chevron admitted that its commercial-scale CCS project in Australia failed to meet its five-year capture target of 80% CO₂, and instead only captured 30%.^[6] The oil company is now seeking a deal with regulators on how to make up for millions of tons of CO₂ it did not store. This is one of many flagship CCS projects have either completely failed or captured much less CO₂ than promised.^[7]

D. CCS requires large amounts of energy, which threatens California's grid stability

CCS requires large amounts of energy for heat and electricity that would put increased pressure on California's grid. The additional energy required to capture, transport, and inject carbon underground results in higher energy costs, greater emissions of non-CO₂ air pollutants such as NO_x, and increased energy demand on an already strained power grid.

CARB must take these additional energy demands and risks into account when considering CCS, especially given the grid demands in recent years that have led to blackouts.^[8] Adding CCS to current

energy production is likely to increase the cost of energy to Californians. A recent study concluded that for a new-build gas-fired plant with CCS, the CCS could increase the cost of energy produced by up to 61 percent.^[9] CARB should not be encouraging and incentivizing CCS in fossil fuel sectors that require phaseout planning and financial support for community and worker transitions. Instead, the agency must preserve new renewable and clean energy infrastructure for replacing fossil fuels and for the rapid decarbonization needed to meet California's climate goals.

E. CCS increases water usage and risks polluting groundwater and air quality

CCS projects can increase power plant water usage by 50-90%, making CCS an exceptionally risky endeavor for drought-ridden California. Water tables are already compromised in the Central Valley, which is where the majority of CCS sites are being proposed. Continuing to draw upon non-renewable water resources will further compromise the region's water infrastructure.^[10] In addition, CCS may introduce saline into water tables, rendering the water unusable, thus furthering a state of climate crisis. When piped in from distant locations, water also has a significant carbon footprint,^[11] whose cost should be factored into decisions regarding CCS. CCS also can sustain and even exacerbate air pollution, an issue of particular concern given that the regions where CCS projects are planned and projected are in areas of severe nonattainment for state and federal air quality standards. **CARB must not rely on climate strategies that threaten air or water quality or water supplies.**

F. CCS—even with guardrails—endangers communities

No community in California should be a dumping ground for carbon waste or be put in harm's way by this dangerous technology. In California and elsewhere, Tribal and frontline communities that have already suffered the worst impacts of industrial pollution and environmental racism will likely face the biggest risks from CCS.

Over a dozen CCS projects have already been proposed in the San Joaquin Valley, an area that suffers from the worst air pollution in the nation, and where many residents are particularly vulnerable to pollution.^[12] These CCS projects pose significant new health, safety, and environmental risks from toxic air pollution, pipeline ruptures, and leaks from underground CO₂ storage that could sicken and even kill people.^[13] Many of these proposed projects are for bioenergy with CCS (known as BECCS). Bioenergy facilities in the Central Valley have had repeated air pollution violations,^[14] and research shows that bioenergy facilities with CCS can emit large amounts of harmful non-CO₂ air pollution.^[15] In addition, seven of the newly proposed CCS sites are located over or near fault lines, increasing risk of rupturing pipes, releasing stored CO₂, and contaminating water supplies.^[16]

Furthermore, while the recently-passed SB 905 places a moratorium on pipelines until the federal pipeline agency, PHMSA, completes its rulemaking, it contains an *exception* for facilities that inject CO₂ under their property. We know of at least three CCS projects that are proposing to inject under their property, and the Scoping Plan should not indirectly encourage this kind of community and worker endangerment.

The best community protection is to avoid this inherently dangerous technology altogether in California's climate plan and instead focus on rapidly phasing out the production, refining, and use of fossil fuels.

We strongly urge you to adopt a Scoping Plan that does not rely on investment in CCS for fossil fuel infrastructure. California has the technology and resources to rapidly reduce emissions at the source and transition off fossil fuels at the pace the climate crisis demands. We need you to build on your

recent climate action and adopt a Scoping Plan that will continue to put California at the forefront of global climate leadership and environmental justice.

Sincerely,

1000 Grandmothers for Future Generations
350 Bay Area
350 Conejo / San Fernando Valley
350 Contra Costa
350 Santa Barbara
Acterra: Action for a Healthy Planet
Active San Gabriel Valley
Alliance of Nurses for Healthy Environments
Asian Pacific Environmental Network
Bay Area-System Change not Climate Change (BA-SCnCC)
Biodiversity First!
Biofuelwatch
Breast Cancer Action
California Climate Voters
California Environmental Justice Alliance (CEJA)
California Environmental Voters
California Nurses for Environmental Health and Justice
California Youth Vs. Big Oil
Carbon Cycle Institute
Center for Biological Diversity
Center for Community Action and Environmental Justice
Center for Environmental Health
Center on Race, Poverty, and the Environment
Central California Asthma Collaborative
Central California Environmental Justice Network
Children's Defense Fund-California
Clean Water Action
Climate Action California
Climate Action Campaign
Climate Equity Policy Center
Climate First: Replacing Oil & Gas
Climate Hawks Vote
ClimatePlan
Communities for a Better Environment
Consumer Watchdog
Courage California
Elders Climate Action
EldersClimateAction - NorCal and SoCal Chapters
Environmental Defense Center
Environmental Health Coalition

Environmental Justice Coalition for Water (EJCW)
Extinction Rebellion San Francisco Bay Area
Food & Water Watch
Fossil Free California
Fresnans against Fracking
Good Neighbor Steering Committee
Greenlining Institute
Greenpeace USA
Indivisible San Jose
Jobs to Move America
Leadership Counsel for Justice and Accountability
Let's Green CA!
Local Clean Energy Alliance
Mi Familia Vota
NextGen California
Oil and Gas Action Network
Orange County Environmental Justice
Pacific Environment
Partnership for Policy Integrity
People Organizing to Demand Environmental & Economic Rights (PODER)
Peoples Collective for Environmental Justice
Physicians for Social Responsibility-Los Angeles
Planning and Conservation League
Reclaim Our Power: Utility Justice Campaign
Redeemer Community Partnership
Sacramento Climate Coalition
San Francisco Bay Physicians for Social Responsibility
San Francisco Baykeeper
SanDiego350
Santa Barbara Standing Rock Coalition
Santa Cruz Climate Action Network
Santa Cruz for Bernie
Sea and Sage Audubon Societyt
Sequoia ForestKeeper®
SoCal 350 Climate Action
SolidarityINFOService
Stand.earth
Stop OAK Expansion Coalition
Sunflower Alliance
Sunrise Bay Area
Sunrise Movement Long Beach

The California Water Impact Network
The Climate Center
The River Project
The Robert Redford Conservancy for Southern
California Sustainability at Pitzer College

West Berkeley Alliance for Clean Air and Safe
Jobs
Youth Versus Apocalypse

CC: Lauren Sanchez, Senior Climate Advisor, Office of California Governor Gavin Newsom
Yana Garcia, Secretary, California Environmental Protection Agency
Martha Guzman, Administrator, EPA Region 9

^[1] The first draft recommends, as a primary climate emission reduction strategy for the petroleum refining sector, "CCS on **majority** of operations" (emphasis added). CARB, Draft 2022 Scoping Plan Update (May 10, 2022), p. 59, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>.

^[2] Congressional Committee on Oversight and Reform, Memorandum Re: Investigation of Fossil Fuel Industry Disinformation (Sept. 14, 2022), <https://oversight.house.gov/sites/democrats.oversight.house.gov/files/2022.09.14%20FINAL%20COR%20Supplemental%20Memo.pdf>.

^[3] See Low Demand (LD) Pathway in IPCC Sixth Assessment Report at Figure 3.7 (IPCC, Climate Change 2022: Mitigation of Climate Change, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2022), doi: 10.1017/9781009157926); see also Pathway 1 in IPCC Global Warming of 1.5°C Report at 14, Figure SPM 3b (IPCC, Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018)); see also IPCC SR1.5, at Ch. 2.3.3 and Table 2.SM.12.

^[4] *Id.*; see also Center for International Environmental Law, "Confronting the Myth of Carbon Free Fossil Fuels" at 2 <https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>.

^[5] Young, Ben et al., "Comparative life cycle assessment of carbon capture for petroleum refining, ammonia production and thermoelectric power generation in the United States," 91 *International Journal of Greenhouse Gas Control* 91: 102821 (2019), <https://doi.org/10.1016/j.ijggc.2019.102821>.

^[6] IEFFA, "If Chevron, Exxon and Shell Can't Get Gorgon's Carbon Capture and Storage to Work, Who Can?" (April, 2022), <https://ieefa.org/articles/if-chevron-exxon-and-shell-cant-get-gorgons-carbon-capture-and-storage-work-who-can>.

^[7] Adam Vaughn, "Most Major Carbon Capture and Storage Projects Haven't Met Targets," *New Scientist* (Sept 1, 2022), <https://www.newscientist.com/article/2336018-most-major-carbon-capture-and-storage-projects-havent-met-targets/>.

^[8] Alicia Victoria Lozano, "California warned to brace for another summer of energy blackouts," *NBC News* (May 27, 2021), <https://www.nbcnews.com/news/us-news/california-warned-brace-another-summer-energy-blackouts-n1268879>.

^[9] P. Psarras et al., *Cost analysis of carbon capture and sequestration from U.S. natural gas fired power plants*, 54 *Envtl. Sci. Tech.* 6272, 6274 (2020).

^[10] See e.g., Ai, Zhipin, et al. "Global bioenergy with carbon capture and storage potential is largely constrained by sustainable irrigation." *Nature Sustainability* 4.10 (2021): 884-891.

^[11] Griffiths-Sattenspiel, Bevan, and Wendy Wilson. "The carbon footprint of water." *River Network*, Portland (2009).

^[12] Center for Biological Diversity, Carbon Capture Storage Projects (2022),

<https://center.maps.arcgis.com/apps/View/index.html?appid=07a2bc0121e54b4f8893bf53eccf74ea>

^[13] “Pipeline Ruptures in Yazoo County, Dozens Rushed to the Hospital,” Miss. Emergency Mgmt. Agency (Feb. 23, 2020), <https://www.msema.org/news/pipe-ruptures-in-yazoo-county-dozens-hospitalized/>.

^[14] Center for Biological Diversity, 2021, Forest Biomass Energy Is a False Solution,

https://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest-Bioenergy-Briefing-Book-March-2021.pdf.

^[15] Li, Yin et al., 2022, Future emissions of particles and gases that cause regional air pollution in California under different greenhouse gas mitigation strategies, Atmospheric Environment 273: 118960,

<https://doi.org/10.1016/j.atmosenv.2022.118960>.

^[16] Sano Y, Kagoshima T, et al., (2020) Groundwater Anomaly Related to CCS-CO2 Injection and the 2018 Hokkaido Eastern Iburi Earthquake in Japan. Front. Earth Sci. 8:611010. doi: 10.3389/feart.2020.611010.