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Deliver rapid greenhouse gas reductions at scale, starting in California.

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October 24, 2022

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

Re: Public Comment on the Recirculated Draft of the Environmental Analysis for the Draft 2022 Scoping Plan Update

Dear Chair Randolph and Members of the California Air Resources Board,

Thank you for this opportunity to comment on the Recirculated Environmental Analysis for the 2022 Scoping Plan Update, California's blueprint for how to achieve the state's climate goals. While we are heartened to see more ambition in the upcoming draft of the Scoping Plan, per the governor's July 22, 2022 letter and recent legislation signed into law, there are a number of remaining gaps that need to be addressed in order to meet the state's climate goals and ensure a climate-safe future for all.

1. The Science and Governor Newsom Call for Increasing our Ambition - 2045 is too late

Given the existential threat posed by climate change, its rapidly accelerating pace and the grave impacts that California is experiencing in the form of extreme heat, drought, floods, and record-breaking wildfire, the selection by CARB staff of Alternative 3 is not bold enough. Over 220 medical journals from across the globe declared in September 2021 that "no temperature rise is safe" and our rapidly warming climate poses the greatest single threat to public health¹. New research shows that global warming has already destabilized the Arctic and Antarctic which will drive even more devastating global impacts². In short, as noted by the IPCC's 6th Assessment Report, we have "a brief and rapidly closing window of opportunity to secure a livable and sustainable future for all."³

¹ <https://www.npr.org/2021/09/07/1034670549/climate-change-is-the-greatest-threat-to-public-health-top-medical-journals-warn>

² <https://www.washingtonpost.com/climate-environment/2021/12/14/climate-change-arctic-antarctic-poles/> and <https://www.theguardian.com/environment/2022/sep/08/world-on-brink-five-climate-tipping-points-study-finds>

³ IPCC 6th Assessment, WGII, Feb. 28, 2022

Governor Newsom acknowledged the need to “increase our ambition” in his July 22, 2022 letter to CARB and also in his statement to the Legislature on August 12, 2022. In the later statement the Governor asks the Legislature to “adopt a more aggressive 2030 greenhouse gas emissions reduction target – going from 40% to 55% below the 1990 level.” This interim target combined with a target to reach carbon neutrality by 2035 is far better aligned with what the recent science and climate reality require than the recommendations upon which this analysis is based. We strongly recommend that CARB adopt a goal of at least 55% cuts in GHG emissions below 1990 levels by 2030 in this year’s Scoping Plan.

It also appears from the Environmental Analysis that CARB is not going to incorporate the minimum direct emission reduction requirements from AB 1279 (Muratsuchi, 2022). AB 1279 requires a minimum 85% reduction in GHG emissions by 2045, but the draft Scoping Plan and the EA only evaluate achieving a target of less than 80% for 2045. We urge you to incorporate the 85% minimum target into both documents, pursuant to the recent change in statute.

2. Targeted Evaluations for the Proposed Scenario: Oil and Gas Extraction and Refining (pg. 78-85)

This section should be expanded to include a more robust outline of a path forward for accelerating the phaseout of fossil fuels. Ongoing progress and efforts to reduce demand for petroleum fuels natural gas, and opportunities to phase down oil and gas extraction and refining should be included in this current Scoping Plan, not the next one.

Questioning Assumptions

Some assumptions should be reconsidered. For example, the Scoping Plan assumes that most gas cars and heavy-duty vehicles will be replaced at the end of their useful life. This can and should be accelerated with a state program to replace gas cars and other vehicles and recycle their useful parts prior to their end of life.

The Scoping Plan also assumes that the cessation of registration of new gas cars will be in 2035 per the Governor’s 2020 Executive Order⁴. Given the severity of the climate crisis and the impacts on Californians from combusting fossil fuels, this target year can and should be moved up by five years to 2030, and the heavy duty and drayage fleet phase out timeline goals should also be accelerated.

Managed Decline

There is a delicate balance that needs to be maintained between managing the continuing decline of in-state extraction and real declines in demand, without the unintended consequence of increasing imports that result in an overall increase in GHGs and other undesirable outcomes. This means that phasing out of drilling operations should closely follow real declines in demand so that there is no need for an increase in imports to meet in-state demand. Additional action is needed to address the problem of the approximately 56% of crude oil that is imported, refined in-state, and exported to markets outside of California.⁵

Supply Side / Demand Side Coordination

The Scoping Plan should include an element that calls for the coordination between and *calibration* of activities on the supply side with activities on the demand side to reduce fossil fuel use. This will require interagency collaboration. Integrating the actual *accelerated*

⁴ <https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf>

⁵ <https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries>

reductions on the demand side with reductions of production on the supply side is key to actually achieving the state's climate goals.

Interagency Working Group

This concept, or at least parts of it, have been articulated in some of the comments and in the statement of Chair Randolph in the Joint Meeting of the California Air Resources Board and the Assembly Bill 32 Environmental Justice Advisory Committee on September 1, 2022⁶: “We would like some paragraphs added to the scoping plan calling on the Governor to convene an interagency working group to assess the transition: both refineries and extraction. There are key issues related to jobs, the ripple economic effects...we want supply to wind down commensurate with demand [and] a plan for having those two actually work in tandem.” We are very appreciative of these comments and fully support pursuant action.

There are a lot of good elements in the Plan but it lacks a coherent and overarching method of tying it all together so that efforts in each sector are not siloed or flying blind. Corporate and industrial entities on the demand side should be required to produce decline data and projections that can then be aggregated and used to project feasible reductions of production on the supply side. Much of this information exists but is not necessarily available to the state agency which should be responsible for managing the decline of fossil fuel supply and demand in California.

California and its Scoping Plan have climate goals, with certain target dates for a variety of sectors or metric categories – electricity, GHGs, dates certain to phase out gas cars, etc. What is still lacking in the Plan is a comprehensive integrated plan that connects a managed decline of oil and gas extraction and importing and the resulting multi-sector industrial, commercial, and retail use in California or export. Such a comprehensive plan would also need to integrate import step-downs commensurate with in-state oil and gas drilling. Fossil fuel markets are global markets. If California were to reduce in-state extraction without simultaneously addressing imports, there could be no net benefit. The state and CARB should plan for managed decline of oil and gas production in California integrating the metrics for oil and gas production, imports and exports, and refining, with projected and actual demand side reductions.

Addressing crude import/refined fuel export

The key to phasing out oil and gas extraction in California, and avoiding increases in imports of crude oil for refining to finished liquid petroleum products, is to accelerate demand reduction for those fuels. The Scoping Plan states that “it is not feasible to phase out oil and gas production fully by 2045 given this remaining demand.” This is only true if the demand remains. Efforts on reducing demand need to be accelerated.

Prioritizing impacted communities

In order to reach climate and environmental justice goals, the state needs to cease permitting new oil and gas wells entirely. SB 1137 is a substantial step in the right direction, prohibiting new wells within 3200 feet of sensitive receptors⁷, but enforcement of the engineering controls that the new law prescribes will need vigilance and transparency. We also recommend tightening of safety setbacks for oil and gas production and refining near public spaces and prioritizing the facilities with the most egregious pollution records for early phase out.

⁶ https://cal-span.org/meeting/carb_20220901/

⁷ https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137

Ensuring a smooth transition for workers

The fossil fuel workforce and its labor representatives are key stakeholders that must be engaged at the outset. Without a coordinated and well-planned phaseout, workers will likely face abrupt closures of facilities if the transition is left to market dynamics alone. Key components would include planning for an equitable transition for labor impacted by the closure or throttling back of facilities to include re-application of existing skills in new clean energy technologies, retraining, early retirement, as well as compensation and benefits guarantees.

Biofuel refining

Over the past few years, petroleum refiners have turned to the refining of oils, fats, and other biomass resources for conversion to liquid fuels such as renewable diesel. These conversions are touted as “green” and there may be some improvements over petroleum refining, but there are multiple problems with scaling up of this kind of refining. The negative health and safety impacts to the communities surrounding the refineries that would have been scheduled for decommissioning, would be prolonged. The scaling up of biofuel refining would also likely result in competition with food crops for cropland taken up with crops grown as feedstock for biofuel refining.

3. Transportation and energy storage: batteries on wheels as grid reliability and resilience assets

The potential for ZEVs to provide affordable reliability and flexibility on the grid should be part of CARB’s analysis. This can greatly reduce the cost of getting to a 100% clean grid while getting the most out of the state investments in EVs and reducing dependence on fossil fuel generators during peak periods of electricity demand.

As CARB further articulates implementation guidelines for the Governor’s Executive Order calling for phaseout of the sales of internal combustion engine passenger vehicles by 2035, CARB should mandate that publicly funded EVs and EVSE be bidirectional, so that public investments in electric vehicles can also help support a more reliable and resilient electric grid, building on related projects⁸ already underway. As noted during the October 4th California Energy Commission forum⁹, California’s existing EV fleet has a largely untapped capacity of approximately 10 GW based on over one million EVs on the road. If California reaches 5 million EVs by 2030 as is projected by the CPUC, that might be approximately 50 GW of capacity, close to the system peak record of 52 GW which was reached on September 6th.

When they are not being driven, electric cars, trucks and buses can act as “batteries on wheels.” Emerging vehicle-grid integration technologies can be used to power homes and businesses by using the batteries in electric vehicles when the grid goes down. These mobile energy sources can also be moved where they’re needed most during power outages, like backing up medical centers, fire stations and food stores.

Any owner of one of California’s million (and counting) electric vehicles should be able to export power to the grid — and be rewarded for it — when demand is high. The state’s approved budget includes \$10 billion for ZEVs, which could be used to enhance the resilience and reliability of California’s electricity system without furthering reliance on fossil fuels. For example, electric school buses that charge during the day — and hardly operate at all during

⁸ <https://microgridknowledge.com/ev-microgrid-oakland-schneider/>

⁹ <https://www.energy.ca.gov/event/outreach/2022-10/2022-electric-program-investment-blue-epic-joint-symposium>

the summer — could be deployed as a fleet of batteries on wheels in communities across California¹⁰. California's public agencies own hundreds of thousands of vehicles. These agencies should be planning to not only continue electrifying their fleets, but also to use the battery storage available in these vehicles to prevent power outages in times of crisis.

We also recommend that state agencies begin a process for standardizing public chargers and ensuring working charging stations so the public builds confidence in ZEVs¹¹, building upon information presented the recent CEC workshop¹² on charger reliability. Finally, we support our partners' calls for 100% electric truck sales by at least 2036, setting stronger targets for clean Big Rigs and regulating fleet size at 10+ vehicles.

4. Natural carbon removal: key to achieving carbon neutrality and net negative emissions

In order to meet our state goals of reaching net neutrality and cutting emissions by 85% by 2045 (AB 1279 (Muratsuchi, 2022)), we must be sequestering the equivalent of the 15% of remaining emissions. Reducing statewide emissions by 85% based on 1990 levels (431 MMT/year), means we must remove at least 65 MMT/year of existing emissions to reach net neutrality.

Reliance on natural carbon sequestration (NCS)

This removal, or drawdown of existing carbon pollution, should be heavily reliant on natural carbon sequestration strategies, not only because they are proven and ready to deploy, but because they provide a wide swath of co-benefits that engineered strategies like direct air capture (DAC) cannot offer. Carbon farming, in which practices like no-till and compost application radically improve soil health and draw down 1-4 MT per acre per year¹³, is an impactful strategy that needs focused investment and is essential for water and food security in the face of our current severe megadrought. Silvopasture, cover-crops and hedgerows increase biodiversity and pollinator habitat, all while displacing the need for chemical inputs that produce harmful runoff in water supplies and release potent nitrous oxide emissions. These types of co-benefits that address mitigation and adaptation span different NCS strategies, from wetland restoration, land conservation, forest management, and more. By focusing the state's carbon removal investments into proven NCS strategies, we have the opportunity to not only meet our climate goals, but to create a resilient, healthy, and equitable environment for all Californians.

The state of California has a tremendous opportunity to set ambitious targets for carbon sequestration and GHG reductions on our state's natural and working lands pursuant to the recently signed AB 1757 (C. Garcia & R. Rivas). This bill requires CNRA, with CARB, CDFA, CalEPA, other state agencies, and a new Expert Advisory Committee to update the Scoping Plan with targets and improved modeling for the Natural and Working Lands (NWL) sector. Given the broad exclusion of various ecosystem types and well-known NCS strategies in the current Draft Scoping Plan, it is evident that a remodeling effort is pertinent to fully understand and act on the potential of the NWL sector. However, because the directive to re-evaluate the role of NWL in the Scoping Plan will not yield targets until January 1, 2024, we ask that this

¹⁰ <https://nuvve.com/sdge-and-cajon-valley-union-school-district-flip-the-switch-on-regions-first-vehicle-to-grid-project-featuring-local-electric-school-buses-capable-of-sending-power-to-the-grid/>

¹¹ <https://www.nytimes.com/2022/08/16/business/energy-environment/electric-vehicles-broken-chargers.html>

¹² <https://www.energy.ca.gov/event/workshop/2022-03/electric-vehicle-charging-infrastructure-reliability-workshop>

¹³ <https://pubmed.ncbi.nlm.nih.gov/23495635/>

year's finalized Scoping Plan formally acknowledge the upcoming AB 1757 effort and the updated NWL modeling that will follow.

Distinguishing CCS from carbon removal strategies

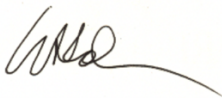
We urge CARB and the administration to clearly distinguish carbon capture and storage (CCS) efforts from “carbon removal” efforts, including recent targets requested by Governor Newsom of 20MMT by 2030 and 100MMT by 2045. The two main objectives of climate change strategies are to cut the amount of GHG emissions entering the atmosphere, and to draw down (remove or sequester) emissions already in the atmosphere. Simply put, this could be thought of as “past emissions” and “future additional emissions.” CCS can theoretically capture some emissions at industrial smokestacks before the pollution is dumped into the atmosphere, falling into the category of reducing “future additional emissions.” Natural carbon sequestration (NCS) and direct air capture (DAC) on the other hand, sequester emissions that already exist in the atmosphere, or “past emissions.” It is important to note, however, that DAC is in its nascent stages, very expensive and energy intensive, with many questions about how to safely handle and store captured carbon, and therefore should not be relied upon to meet the near-term carbon removal targets.

In the Governor’s July 22, 2022 letter to the Board, he states that “achieving carbon neutrality will require us to continue to reduce our carbon emissions and ultimately eliminate most of these emissions, while also removing existing carbon from the atmosphere.” The removal of existing carbon from our atmosphere is only possible through NCS and DAC, and therefore any curtailment of future additional emissions from CCS should be counted towards emissions reduction targets, not carbon removal targets.

Furthermore, the potential of CCS has been disproven time and time again since the 1970s. It has been lambasted for its inability to deliver its promises to capture a significant amount carbon at the smokestack, the danger of transporting the CO₂ that is sequestered, its exorbitant costs, and the ongoing threat it poses to frontline communities. However, for some sectors that cannot be decarbonized due to their inherent manufacturing processes, like steel and cement, CCS technologies may be necessary. These hard-to-decarbonize uses are the only valid applications for consideration of using CCS by the state within the framework outlined in SB 905 (Skinner, 2022).

Time is of the essence to secure a safe and stable climate. We urge the Board to increase its ambition commensurate with the climate crisis, adopt a policy proposal that achieves carbon neutrality by at least 2035, achieves GHG cuts of 55% below 1990 levels by 2030, lays out a pathway for phasing out fossil fuels, utilizes EVs for grid resilience and reliability, and establishes an ambitious target for NCS per AB 1757. Thank you for the opportunity to comment.

Sincerely,



Ellie Cohen
CEO
The Climate Center