



September 7, 2021

Ms. Rajinder Sahota  
California Air Resources Board  
1001 I Street  
Sacramento, California 95814

**Re: Comments on Scenario Concepts Technical Workshop**

Dear Ms. Sahota,

The undersigned organizations appreciate this opportunity to comment on the California Air Resources Board's (CARB) 2022 Scoping Plan Scenario Concepts. Our coalition consists of organizations that represent state manufacturing, industrial, commercial, agricultural, and energy sectors. We are committed to working with state regulatory agencies and other stakeholders to achieve carbon neutrality in the most equitable, cost-effective and sustainable manner possible.

As part of the 2022 AB 32 Climate Change Scoping Plan stakeholder process, the California Air Resources Board (CARB) has asked for stakeholder input on potential alternative modeling scenarios to achieve carbon neutrality targets. We were pleased to see a range of initial scenarios proposed for discussion. We believe a more comprehensive approach that explores a broader range of policy options is more likely to elucidate best-fit scenarios that achieve carbon neutrality without pushing California's economic productivity and greenhouse gas (GHG) emissions into other jurisdictions or exacerbating existing socioeconomic inequities.

CARB's approach to carbon neutrality scenario modeling must also address the conditions that contribute to such potential outcomes. California energy costs are already well above national averages. California has the highest transportation fuel prices in the nation, and those prices are subject to extreme volatility due to supply constraints. Our residential electricity rates, historically among the lowest in the nation, have been increasing rapidly with electric bills being substantially higher in lower income interior regions. Among the contiguous states, US Energy Information Administration data indicates that as of May 2021, California now has the fourth highest residential electricity rate (12-month rolling average), the second highest industrial rate, and the highest commercial rate. A February 2021 affordability study by the California Public Utilities Commission (CPUC) estimated Investor Owned Utility (IOU) rates will increase from 35% to 47% through 2030, levels that the study concluded "... could create equity concerns for low- to moderate-income

households and exacerbate existing disparities in electricity affordability.” To reverse these unsustainable trends, CARB’s approach to modeling carbon neutrality scenarios must first be able to discern the most cost-effective alternatives.

And, in the interest of maximizing the public benefit of state and private party resources invested in climate program implementation, this scenario modeling process should also consider whether existing greenhouse gas (GHG) reduction measures should be retained or replaced with more cost-effective alternatives. A more comprehensive analysis may conclude that greater reliance on market-based mechanisms such as Cap and Trade will yield larger emissions reductions at a lower cost than continued reliance on more prescriptive, sector-specific mandates.

The potential impact of decisions made in this Scoping Plan Update process are unprecedented. California is a major player in the global economy, and our policy choices in this process will either inspire other jurisdictions to follow our lead or serve as a cautionary tale of the unintended consequences that come from results-oriented thinking. To achieve sustainable environmental benefits, California needs to do the former and avoid the latter, and CARB’s approach to modeling carbon neutrality scenarios in this Scoping Plan Update is one of the most critical steps in achieving that outcome.

### ***Definition of Carbon Neutrality***

CARB staff has proposed defining carbon neutrality as emissions sources being equal to emissions sinks, not as absolute zero emissions from all sources. This definition is in alignment with the United Nations’ Intergovernmental Panel on Climate Change (IPCC) definition of carbon neutrality which seeks “to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases.” Unlike absolute zero emissions, net-zero emissions can be more cost-effectively achieved with early and sustained engineered carbon removal to offset emissions from more difficult to decarbonize sectors while also providing a glide path to net-negative emissions. This approach would smooth the transition for the public and reduce disproportionate impacts on socioeconomically disadvantaged communities, strengthening CARB’s position as a global leader on climate policy while encouraging other jurisdictions to follow.

The International Energy Agency (IEA) and the IPCC agree that there is no available evidence to suggest that carbon neutrality is achievable without engineered carbon removal. Even with aggressive technology development and transfer, global demand for liquid and gaseous fuels is expected to remain strong for the next several decades to serve existing transportation infrastructure, manufacturing, building stock, and hard-to-decarbonize sectors. Additionally, it is unlikely that all jurisdictions will pursue carbon neutrality strategies with equal vigor. During the August 18 Joint Legislative Committee on Climate Change Policies hearing, CARB Chair Liane Randolph emphasized the need to maximize all available carbon sinks to achieve the state’s climate goals. Carbon capture, utilization, and storage (CCUS) will need to play a central role in this transition. Not only is CCUS necessary to meet California’s climate policy targets over the next three decades, it is also readily quantifiable and verifiable, and will be more reliable over the long term when compared to other storage strategies that are increasingly vulnerable to the effects of climate change. CCUS technologies have been embraced by our members in recognition of the role that we must play in reducing global carbon emissions. California must also continue to produce energy in-state from reliable and highly controlled conventional sources to prevent emissions leakage to less regulated jurisdictions that would impede our progress toward carbon neutrality.

***To achieve carbon neutrality in California, the 2022 Scoping Plan must embrace an “all-of-the-above” approach. As Chair Randolph stated during the August 18 legislative hearing, “When the house is on fire, nobody worries that there are too many fire trucks. They are focused on putting out the fire.” Our coalition wholeheartedly agrees with this sentiment.***

We urge California regulators to chart a future-proof course that utilizes every tool at the state's disposal, to mitigate the uncertainty of technological breakthroughs and setbacks, and future changes in political priorities.

### ***Scoping Plan Scenarios***

The 2022 Scoping Plan Update has the potential to recast the world's fifth largest economy and charting an unsustainable course would likely result in widespread economic dislocation which would be harmful to California families across the board. To avoid this unwanted and potentially disastrous outcome, it is imperative that CARB accommodate more extensive and in-depth discussion on potential modeling scenarios prior to the release of the draft Scoping Plan Update. During the August 26 meeting of the Environmental Justice Advisory Committee (EJAC), CARB staff indicated that there will be additional opportunities for EJAC engagement on the modeling for the Scoping Plan Update. We agree that this process should be as iterative and interactive as possible. It should also be expanded beyond the EJAC to engage other stakeholders who can contribute important policy perspectives and valuable technical information. In addition to the need for more workshops to solicit feedback from affected stakeholders, we request that CARB disclose all inputs and assumptions underpinning the Scoping Plan modeling scenarios before the actual modeling work begins. This transparency is necessary to allow for a thorough public vetting of initial policy choices and to stimulate stakeholder thinking on potential alternative scenarios that could more effectively mitigate undesirable impacts.

As noted above, any scenario considered in this process must reasonably achieve carbon neutrality by balancing emissions sources with sinks. The most stringent scenario presented by CARB - Scenario A - does not address hydrofluorocarbon (HFC) emissions and therefore would not achieve carbon neutrality. Scenario A would also require significant curtailment of entire sectors, sacrificing tens of thousands of jobs (and California families) and billions of dollars in economic productivity. It is concerning that a scenario with such dramatic negative consequences would be contemplated at all, but especially when it would fall short of achieving the state's climate policy goals.

AB 32 requires CARB to minimize greenhouse gas emissions leakage to the extent feasible. The sector-wide shutdowns that would be necessary under Scenario A would be a recipe for extensive emissions leakage as production capacity increases in other jurisdictions in response to continued demand for goods and services no longer produced in California. That outcome would marginalize the environmental benefits of in-state greenhouse gas emissions reductions. Prior to taking any further steps in this direction, additional studies on sector-specific and economy wide impacts and associated emissions leakage must be completed by CARB and presented for public review and comment.

Additionally, in future workshops and discussions, we urge CARB to evaluate a broader range of scenarios and utilize additional modeling tools in recognition of the global scale of the carbon neutrality challenge. Success will require economy-wide solutions rather than sector-by-sector approaches. Economy-wide scenarios address interdependency among sectors and are more likely to achieve policy goals at a lower cost and with fewer unintended consequences. However, identifying optimal economy-wide scenarios will require more robust modeling tools. E3 acknowledges that the PATHWAYS model is not capable of optimizing the complex set of variables involved in evaluating alternatives to achieve carbon neutrality. To define the most equitable, cost-effective and sustainable alternatives, CARB must employ a better tool that can account for real-world constraints and predict realistic solutions.

### ***The Need to Preserve Optionality***

CARB and other state regulators must resist the temptation to define Scoping Plan scenarios around

pre-ordained technologies. All reasonably available and foreseeable options should be considered and subject to a full life cycle analysis (LCA) to allow for direct comparisons of relative efficacy. Promising technologies include, but are not limited to, biomass, hydrogen, lower carbon intensity liquid fuels, renewable natural gas, CCUS and market mechanisms such as Cap and Trade. A technology-neutral approach will encourage innovation, allow for rapid adaptation to technological breakthroughs and maintain progress toward carbon neutrality if promising technologies do not materialize at market scale within the planning horizon. Moreover, the flexibility inherent in a technology-neutral approach is necessary to accommodate unforeseeable events that can be expected to occur over a 25-year planning horizon.

Our organizations align with the Biden White House as a strong proponent of CCUS. As stated by Sarah Forbes, Director of CCUS in the Executive Office of the President, during the August 3 workshop on engineered carbon removal, CCUS has a long history in the American economy dating back to the early 1900's. With 26 sites currently operating at commercial-scale, CCUS is a proven technology, though a significant scaling up and clear market signals are needed to obtain the public and private investments necessary for wide-scale adoption. According to Ms. Forbes's presentation, such projects will need to increase tenfold to reach carbon neutrality targets. California is particularly well positioned to be a leader in CCUS adoption and expansion. According to Roger Aines, Senior Scientist at Lawrence Livermore National Laboratory, there are currently 17 billion tons of safe storage capacity identified within just two areas in the Central Valley with as much 200 billion tons of safe storage estimated to be available within state boundaries.

California must also evaluate the potential benefit of market mechanisms in the Scoping Plan modeling scenarios as they are the most cost-effective means of achieving GHG emissions reductions. Properly designed market mechanisms such as Cap and Trade can stimulate technology and operational innovation and outperform process and sector-specific regulatory mandates.

### ***Focus on Carbon Neutrality***

The unprecedented scale of California's carbon neutrality challenge, the many uncertainties inherent in a 25-year planning horizon, and the potential ramifications of choosing the wrong path require us to be clear eyed as a state about our approach to pursuing carbon neutrality. While co-pollutant benefits will be achieved as a result of economy-wide GHG emissions reductions and deployment of negative emissions technologies, our focus should remain on the primary goal of defining the most equitable, cost-effective and sustainable path to carbon neutrality. California communities will benefit from continued reductions in emissions of conventional criteria pollutants and toxic air contaminants through ongoing implementation of increasingly stringent federal, state, and local air quality programs. These programs include measures to further reduce emissions from existing sources and to mitigate any additional emissions from new and modified sources. With the passage of AB 617 (Garcia, 2017) and implementation of CARB's Community Air Protection Program, plans for additional air quality emissions reduction measures are being developed for communities identified as having a high cumulative exposure burden to conventional air pollutants. CARB should continue to focus on refining and improving this program to deliver air quality benefits.

### ***California Environmental Quality Act Environmental Analysis***

During the August 17 workshop, CARB solicited initial public input on the "appropriate scope and content" of the CEQA Environmental Analysis (EA). While we support staff's decision to conduct an EA for the Scoping Plan Update, we are concerned that this work will be confined to a limited number of scenarios that do not capture the full range of alternatives available to the state to mitigate potential environmental impacts during the transition to carbon neutrality. As discussed elsewhere in these comments, there is a pressing need for further stakeholder engagement and an iterative process to explore additional modeling tools to identify the most cost-effective, equitable and

sustainable pathways to carbon neutrality. This work should be completed before the EA is developed, allowing additional alternatives to be evaluated alongside staff's initial conceptual scenarios. Otherwise, the EA will be incomplete and may fail to elucidate alternatives that could avoid unintended environmental impacts.

### ***Conclusion***

California's success in impacting global climate change will depend on our ability to demonstrate to the world that carbon neutrality can be achieved without major economic and societal dislocation. If we fail to strike the right balance in our planning process, our future actions will discourage other states and nations from following our lead, and we will only succeed in diminishing the well-being of Californians.

We ask that CARB pursue a balance between GHG emissions sources and sinks on an economy-wide scale, embrace early, widespread, and sustained deployment of negative emissions technologies, and evaluate a prominent role for the state Cap and Trade program to stimulate innovation and identify the most cost-effective solutions. We also ask that CARB avoid the temptation to foreclose options that may be necessary to adjust to changing circumstances during the 25-year planning horizon. Finally, we request that all modeling inputs and assumptions be made available to the public and that CARB allow sufficient time for an iterative engagement process on scenarios and additional modeling tools prior to the release of the draft Scoping Plan Update.

Thank you for your consideration of our comments. We look forward to the opportunity to discuss these issues with CARB staff as the 2022 Scoping Plan Update process unfolds.

Sincerely,

**American Forest & Paper Association  
Auto Care Association  
California Automotive Wholesalers' Association  
California Building Industry Association  
California Business Roundtable  
California Farm Bureau Federation  
California Fuels & Convenience Alliance  
California Independent Petroleum Association  
California League of Food Producers  
California Manufacturers & Technology Association  
California Metals Coalition  
California Restaurant Association  
Council of Business & Industries of West Contra Costa County  
Industrial Association of Contra Costa County  
Industrial Environmental Association  
Western Independent Refiners Association  
Western Plant Health Association  
Western States Petroleum Association  
Western Wood Preservers Institute**