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April 4, 2022

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

Subject: Comments on the 2022 Scoping Plan Update – Initial Modeling Results Workshop

Dear Ms. Sahota:

The undersigned organizations appreciate this opportunity to comment on the California Air Resources Board's (CARB) March 15, 2022 public workshop relating to the Initial Modeling Results of the 2022 Scoping Plan Update. Our coalition consists of organizations that represent California's manufacturing, commercial, industrial, agricultural and energy sectors. The coalition is committed to working with CARB, other state regulatory agencies and interested stakeholders to implement cost-effective policies and regulations that protect California jobs and the economy while also working to meet the state's emissions and carbon neutrality goals.

The continued success of California's emission reduction strategies, and our prominence as an international leader in climate policy and position in the global economy, is a delicate balance. The state's economy is being shaped by our climate policy-- as such, California businesses must factor California climate policy into their multi-year or multi-decade planning efforts. Clear market signals and a steady regulatory environment—one not prone to routinely shifting compliance targets—is critical for industry to sustain steady progress toward carbon neutrality while protecting profitability and the livelihood of their employees. In this vein, it's imperative that CARB provide venues for further deliberation amongst all interested stakeholders, disclose the underlying model assumptions and data inputs, and evaluate the marginal costs of the identified alternatives.

While we understand that the March 15th workshop was not intended to focus on costs of the identified alternatives, marginal costs are a critical determinant of feasibility. Across all identified alternatives there are significant challenges associated with energy reliability, cost containment, matters of equity and varying degrees of reliance on technologies that are still in the very early stages of research and development.

The recent workshop provided little substance or data and was limited to a presentation of high-level findings. Given the commitment of many stakeholders to this important undertaking, and CARB's intention to approve the 2022 Scoping Plan Update in the coming months, this level of engagement is inadequate. It is time that the process and discussions evolve from the abstract and hypothetical to more probable scenarios, and CARB's analysis of the feasibility of those scenarios must be provided so that the combined resources of stakeholders can be more effectively utilized in an iterative process to develop a sustainable path to carbon neutrality.

Without more relevant in-depth analysis, business and industry are challenged to provide substantive comments given the limited information CARB has released to the public. As this process continues, we urge CARB to be more transparent with stakeholders, refocus its efforts on feasible alternatives, resist political pressures to arbitrarily choose technological winners and

losers, and appropriately optimize each of the alternatives to identify the least cost pathway to achieving California's carbon neutrality targets.

Scoping Plan Scenarios and Key Metrics

We were disappointed that, once again, an infeasible alternative of zero-combustion was modeled for this workshop. Alternative 1 is the maximum leakage pathway that would eliminate California jobs, threaten in-state economic stability, and lead to a net increase in global GHG emissions. It is also the alternative that is most likely to discourage international cooperation, and thus diminish California's impact on global climate policy and emissions reductions.

Essential California industries such as food, stone, glass, cement, biofuels, oil and gas extraction, petroleum refining and carbon dioxide removal would be decimated. For California's agricultural industry, Alternative 1 would require the elimination of livestock herds and the use of methane digesters in the dairy industry. Alternative 1 also presents significant challenges for the food processing industry by requiring full electrification despite its infeasibility. The analysis fails to recognize the trade-off between climate policy, the increasing costs of food and impacts to food availability.

The alternative relies upon full electrification, and in doing so ignores the raw materials required to facilitate a full transition and the concerns of energy reliability during a time of unprecedented energy demand. The vision of a low-carbon California economy, and the technologies needed to achieve it, require products of industry. The important parts of a net zero-energy system, such as transportation infrastructure, zero-emission vehicles, renewable power generation, transmission and storage infrastructure, carbon capture equipment, and CO2 or hydrogen pipelines will consume large amounts of steel, cement, glass and plastic. Ironically, the very industries some stakeholders seek to eliminate within California are the keys to a low-carbon California economy. If these products are not produced in California, they will be produced elsewhere - most likely in jurisdictions with fewer controls on GHG emissions – and then shipped into the state. Thus, the net effect of Alternative 1 would be to reverse progress toward carbon neutrality by increasing total GHG emissions over the life cycle of the implicated products.

Allowing climate policies to be co-opted for other purposes, such as accelerating localized reductions of criteria pollutants and toxic air contaminants, will cause those policies to fail. Health and Safety Code section 38562(b)(8) requires CARB to design GHG emission limits and emission reduction measures to minimize leakage. The current construct for Alternative 1 is inconsistent with the statutory mandate. It will be important to understand the extent to which this scenario would increase both environmental and economic leakage. Therefore, we encourage CARB to evaluate and disclose these impacts to the public so that community groups and other stakeholders can consider how they compare to other less disruptive alternatives for achieving carbon neutrality.

In addition, though the costs for alternative scenarios have yet to be modeled, it stands to reason that the early retirement of 16 million light duty internal combustion engine vehicles and all gas appliances would have severe consequences for the state budget. Funding this component of Alternative 1, given California's Constitutional obligation to adopt a balanced budget, will almost certainly lead to dramatic cuts to social spending or further tax increases on Californians, or both. As stated at the March 24th CARB Board hearing, the federal Cash for Clunkers program cost $3 billion and funded the retirement of 690,000 vehicles. Assuming the

cost for California's program is comparable to the federal program, the vehicle retirement aspect alone would cost $69.5 billion.

Of the four alternatives, Alternative 1 stands as the most costly and infeasible. California businesses already bear the heavy burden of the state's regulatory climate, even under the business-as-usual approach. Thus, Alternative 1 is not the only alternative that may lead to employers moving out of state and emissions leakage. Should the initial modeling prove accurate, the March 15th workshop revealed that every modeled alternative meets the 2030 40% below 1990 target, and three of the four alternatives meet the 2050 80% below 1990 target. Given this information, it is unclear how the state could justify opting for a more restrictive scenario, when a scenario with less burdensome mandates can meet state goals while also helping to preserve the competitiveness of California businesses and reducing GHG emissions leakage.

Carbon Removal

The alternatives all consider carbon removal technologies and projects to meet emission reduction targets. If the 2022 Scoping Plan is truly intended to establish a trajectory toward carbon neutrality, the debate surrounding carbon capture, utilization, and storage (CCUS) needs to fundamentally shift. There is no further purpose in discussing whether engineered carbon removal will need to be used to meet California climate goals – that question has been asked and answered repeatedly by E3 and other climate policy experts and scientists world-wide, and the unambiguous answer is YES. CARB must now pivot to creating a practical regulatory structure and incentives to encourage rapid deployment of CCUS, identifying high priority sites for early investment, and charting a course for more wide-spread adoption. California can ill-afford for CARB to arbitrarily choose technologies. Instead, CARB must rely on a broad suite of options to reduce emissions. Among the common core features of these alternatives is engineered carbon removal, including direct air capture, CCUS, and other carbon removal or sequestration approaches. As CARB further refines the initial modeling results to inform the 2022 Scoping Plan, CARB must chart a course that relies on the best available science and the most cost-effective technologies.

Carbon capture provides a significant opportunity to reduce emissions from hard-to-decarbonize sectors. While there is value in other carbon sinks, including California's natural and working lands, carbon capture is more easily quantified and definitively more permanent, particularly given California's wildfire-prone landscapes. Carbon removal projects and technologies create opportunity for circular economies in California and protect existing jobs, some of which can be readily transitioned to these projects. California is particularly well-suited to engineered carbon removal projects given our innovative spirit, environmental ambition, technological brain trust, geography and geology.

Challenging Energy Demands and Development Needs

The PATHWAYS modeling is based on unprecedented build rates for solar, battery and wind technologies that greatly exceed current annual build rates. Even the least ambitious of the alternatives will require doubling California's current solar energy resources and nearly a seven-fold increase in battery utilization. The most ambitious alternative assumes a quadrupling of historic state solar resources and a near seventeen-fold increase in historical battery resources. Given current trends, where such projects may take a decade or more to permit, construct, and

bring resources online, it would be irresponsible for CARB to assume this level of resource build can be achieved. Since 2010, combined solar and wind generation has increased to 23% of total-in-state generation.[1] Wind generation, however, has remained relatively constant since 2015, indicating that solar has been responsible for much of the growth in California's renewable generation. Given the intermittency of solar, this growing imbalance threatens energy reliability. The challenges facing California's energy system are largely ignored by PATHWAYS, and its singular focus on generation capacity is troubling.

Each of the alternatives requires significant electrification across the transportation, residential, commercial and industrial sectors. The size of California's future electrical grid will be unprecedented and requires the simultaneous expansion of not just generation but also the infrastructure that supports the entire system (transmission and distribution). The Senate Bill 100 Joint Agency Report indicates that solar growth will have to exceed two to three times historic deployment rates, while energy storage will have to expand eight times.[2] Despite the needed growth of renewable generation, actual in-state growth has been slowing.[3] Increasing the contribution of renewable generation to the California grid at the scale required to meet RPS and carbon neutrality targets will also be extremely land intensive. Further complicating this expansion, land use authority lies almost exclusively with local authorities, many of which have been reluctant to permit projects at the necessary scale.

As we have heard from other stakeholders, California is well suited for developing renewable energy resources and especially solar. Unfortunately, California grid expansion will be constrained by areas of conservation sensitivity and overall suitability. There are often other challenges and limitations in constructing the needed infrastructure to ensure a carbon-free energy future.[4] Public opposition, sensitivities to cultural heritage sites, environmental protection, equity and social justice factors all play a significant role in determining the viability of any planning and buildout of new energy resources. And as noted above, the buildout of these new resources also requires the industrial raw materials – steel, cement, plastic and glass – to achieve the end result.

Californians Left Behind – Concerns of Equity and Cost of Living

It is apparent that under any scenario currently modeled, the 2022 Scoping Plan will lead to significant emissions reductions in the future. The unknown is how expensive the path to carbon neutrality will be – not only for the state, but more importantly, for those who continue to call California home. Individually and collectively, rapid replacement of passenger and light-duty zero-emission vehicles and related infrastructure, replacement of gas appliances with all-electric substitutes and increased electrical and natural gas utility rates all have the potential to greatly exacerbate existing inequities.

There is little doubt that working class communities, those least able to afford the large upfront costs of this transition, will bear most of the burden. While affordability is a significant factor for the vast majority of the population in purchasing decisions for new vehicles and home appliances, certain alternatives modeled in PATHWAYS would result in job loss for some

[1] California Air Resources Board. 2000-2019 GHG Inventory (2021 Edition).

[2] SB 100 Joint Agency. SB 100 Joint Agency Report: Charting a Path to a 100% Clean Energy Future.

[3] Next 10. California Green Innovation Index.

[4] https://www.latimes.com/environment/story/2021-12-21/biden-administration-approves-two-solar-farms-in-california-desert

Californians, completely eliminating the ability of those households to participate in the transition.

CARB's decision to model an alternative that would result in thousands of California families losing their income, health care and retirement is not only contrary to the statutory mandate of Assembly Bill 32 and Senate Bill 32, but also of efforts by the Legislature and the Administration to advance socioeconomic equity in California.

Conclusion

The undersigned organizations consider the 2022 Scoping Plan Update process and associated modeling as important opportunities to meet state climate goals, export state values across the globe, and preserve California's economic engine. Unfortunately, under a non-optimized modeling process focused on four arbitrarily defined alternatives with no access to underlying data and assumptions or evaluation of economic impacts, it is nearly impossible to provide substantiative comments to inform the 2022 Scoping Plan.

To chart a path of least regret - one that achieves carbon neutrality targets at the lowest possible economic impact and with the lowest amount of emissions leakage - CARB must make the process more accessible to stakeholders. California industry has proven itself to be a willing partner in the state's climate efforts, but to find a win-win solution that simultaneously promotes climate stewardship, equity, jobs, and a healthy economy, significant changes in modeling inputs and process will be required. We urge CARB to proceed with the remainder of the 2022 Scoping Plan Update process in a manner that values data transparency, and technological and economic feasibility.

Thank you for your consideration of our comments. We look forward to further opportunities to engage with you, CARB staff, and other interested stakeholders as the 2022 Scoping Plan continues to unfold.

Respectfully,

CALIFORNIA MANUFACTURERS & TECHNOLOGY ASSOCIATION
AGRICULTURAL COUNCIL OF CALIFORNIA
AMERICAN PISTACHIO GROWERS
ASSOCIATION OF MANUFACTURERES BAY AREA
BETTS COMPANY
CALIFORNIA ASSOCIATION OF WINEGRAPE GROWERS
CALIFORNIA CHAMBER OF COMMERCE
CALIFORNIA BUSINESS ROUNDTABLE
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