



June 23, 2022

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

**Subject: Draft 2022 Scoping Plan Update (May 10, 2022)**

Dear Chair Randolph and Honored Board Members:

The Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) warmly thanks the California Air Resources Board (CARB) for the opportunity to comment on the Draft 2022 Scoping Plan Update – a historic document that envisions how the State of California can achieve carbon neutrality by 2045.

As the world's fifth largest economy, California has taken bold steps to implement policies and programs to reduce greenhouse gas (GHG) emissions. With concerted actions from across all levels of government, we have, remarkably, attained our 2020 goal to reduce GHG emissions to 1990 levels four years early. Yet to reach our 2030 and 2045 targets, much more remains to be done, requiring unprecedented levels of action, a wholesale transformation of the economy, and thoughtful revolutions on how Californians live and move in just over two decades. As such, the path forward called for in the Draft 2022 Scoping Plan Update must not be theoretical but also concrete, actionable, and ambitious.

The Sac Metro Air District is the local agency with responsibility for advancing the greater Capital Region toward meeting national ambient air quality standards and the state's decarbonization commitments for protection of the global climate. To that end, we work with our partner agencies to develop locally appropriate measures that achieve these goals. We believe that the goals and strategies outlined in the Scoping Plan, while high level, play an instrumental role in guiding regional and local climate action, and accordingly, we provide the following comments on the Draft 2022 Scoping Plan Update to further its on-the-ground success.

### **Overarching comments**

The Scoping Plan is a modeling exercise, but it needs to also consider real world conditions. The Scoping Plan exists within the realm of existing regulations, a diverse range of communities and local government with varying priorities and growth plans, and millions of residents and businesses with their own preferences and values. When setting ambitious goals such as 100% ZEVs for new light-duty sales or 100% electric residential appliance sales by 2035, the Scoping Plan should consider that success does not depend solely upon available technology and financing; engagement, outreach, persuasion, and marketing are equally important parts of the puzzle to enable California to reach its targets.

Much of the thinking behind on our daily decisions on where to live, what to buy, and how to get around are driven not only by logic and numbers but by social norms and the complexities of

human psychology. Local governments must be convinced and encouraged to choose infill-oriented growth patterns and not the easier alternative of greenfield; cities and regions must commit to investments to make walking, biking, and transit more convenient and appealing to win over drivers; households must be convinced to undertake time-consuming retrofits to electrify their homes when they may prefer to cook with gas; and so on.

California is at a phase where, after making considerable progress through regulation, it must rely upon individual choice to fully achieve its future reductions. Mandated reductions through regulated entities – e.g., the Renewable Portfolio Standard for utilities or tailpipe emission standards – are far easier than persuading millions of people and businesses to uptake more expensive, less familiar, and less convenient choices in their daily lives. The crux of success for this Scoping Plan is not only technology-based but people-based. That’s why metrics-based mechanisms such as a performance standard for existing buildings and a zero-emissions performance standard for new space and water heaters (p172) will be critical to help facilitate market transitions and guide consumer choice. We urge CARB to not only consider the technology needed to reduce emissions, but also the policy levers, performance standards, incentives, marketing, education, outreach, and other mechanisms that are crucial to catalyzing widespread market shifts.

Similarly, the success of California’s Scoping Plan targets relies upon hundreds of local planning and planning processes, for not only new housing but also for local energy storage, electric vehicle chargers, renewable energy generation, composters, anaerobic digesters, et cetera. Yet the realities of local control mean that the deployment of the new climate infrastructure will not be uniform across the state. To take organic waste separation as an example, to meet its SB 1383 targets California needs a rapid build-out of composting and anaerobic digesters across the state. Yet the high costs of building such facilities and taking them through environmental review and permitting—including by air districts—mean that few businesses are eager to enter into this space. As a result, the market to support organic waste recycling remains limited, and we are far short of needed organic waste processing capacity, even as we fall short of SB 1383’s 2020 target to reduce organic waste from 2014 levels by 50 percent. Similar challenges exist with forest biomass. For each of these sectors, an interdisciplinary effort is needed to study existing challenges, barriers, and market dynamics.

As it stands, it is not clear precisely how the actions outlined in the Scoping Plan will lead to the emission reductions forecasted in the Proposed Scenario.

With all the challenges outlined above, it’s critical for the Scoping Plan to maximize all available GHG reductions from regulatory areas over which CARB has authority, rather than rely upon individual choice, cap-and-trade, or carbon capture and storage (CCS). Because of their outsized impact on near-term warming, short-lived climate pollutants should especially be prioritized, including HFCs and methane. We urge California to follow international standards in adopting standards to allow for the use of natural refrigerants and other low-global warming potential (GWP) refrigerants for use in heat pumps and air-conditioners as soon as possible, and not over multiple building code update cycles.

## **Specific comments**

### **Chapter 2**

- **Table 2-2: Actions for the Proposed Scenario: AB 32 GHG Inventory sectors (p58)**
  - Many of these listed actions are not actions but goals and targets. Consider reframing for greater clarity and effectiveness.

- **Missing areas of action:** Table 2-2 contains no actions or targets for 1) building energy efficiency improvements – critical to reducing electricity demand for existing buildings, especially as the grid becomes 100% renewable; 2) active transportation; or 3) transit use. We believe these are critical actions to include in the Proposed Scenario to reduce energy demand and vehicle miles traveled. We recommend that CARB set clear actions or targets for these areas, including electrification and full retrofits of residential and commercial buildings.
- **p61:** We understand that the target is set at 0% electrification by 2030 for both the Chemicals and Allied Products; Pulp and Paper sector and the Other Industrial Manufacturing sector to reflect the current state of technology. However, establishing a 0% baseline for 2030 nonetheless feels artificially limiting and seems to preclude the possibility of breakthrough advancements or ambitious early adopters.
- **High Global Warming Potential Emissions (p63):** CARB should develop specific, ambitious numeric targets and metrics for High Global Warming Potential Emissions, as was done for other areas. Ideally, there should be targets for each end use (e.g., commercial refrigeration, residential cooling, commercial cooling, etc.) and for both new and existing sources. Targets and actions should also cover end-of-life recovery.
- All emission sectors that have not yet reached 100% decarbonization by 2030, such as non-combustion methane emissions, should have additional targets and actions outlined for the 2030 to 2045 timeframe. Other examples missing post-2030 targets include low-carbon fuels for buildings and industry (p62) and low carbon fuels for transportation (p62),
- **End-of-life replacement in the Proposed Scenario:** The Proposed Scenario assumes end-of-life replacement of vehicles to transition California fleets to zero-emissions, while also modeling a rapid scale up in sales of ZEVs. This modeling appears to make assumptions that are not realistic regarding consumer choice, market trends, and current trajectory of ZEV sales. While CARB may feel comfortable assuming that ZEV sales will rapidly increase, it is clear that there will be competing market dynamics, consumer preferences, and cost considerations that lead people to continue to prefer internal combustion-engine (ICE) vehicles. We urge CARB to consider additional incentives or policy mechanisms to support ZEV adoption.

In addition, one wonders how the end-of-life replacement assumption in the Proposed Scenario will affect Clean Cars 4 All, HVIP, and other popular mobile source incentive programs; does this suggest, for example, a planned phase out or discontinuation of these programs? As the Scoping Plan also projects that cap-and-trade will continue to operate to help close any emissions gaps, we see an ongoing opportunity to channel Greenhouse Gas Reduction Fund (GGRF) into programs to help accelerate the transition to ZEV technology for residents and businesses, especially those in underserved communities. We also believe that end-of-life replacement may not be sufficient in urgency to combat the climate emergency, nor address existing health and air quality disparities, and we urge CARB to continue and expand its existing incentive programs with GGRF funding. Indeed, we see further opportunity to enhance existing mobile source incentive programs with additional programs to help support the adoption of electric bikes and electric appliances for both commercial and residential buildings.

- **Comparison of Alternatives with the Proposed Scenario, p55:** It is unclear how Natural and Working Lands (NWL) Alternative 1 provides the most GHG reductions

when this scenario results in the most wildfires. A comprehensive analysis should account for the GHG emissions from wildfires and net carbon lost/sequestered as a result of the management choices in each scenario to allow for a complete comparison between NWL strategies. This is especially important as NWL Alternative 4 is designed to minimize the occurrence of wildfires.

- **Natural and Working Lands Proposed Scenario, p63-65:** Notably, the proposed scenario for Natural and Working Lands sets targets of zero land conversion for forests, shrublands/chaparral, and grasslands. It also assumes a land conversion rate that is 50% of the Reference Scenario rate for sparsely vegetated lands, as well as 6,000 acres of croplands conserved each year through land easements. These low land conversion rates essentially are not only targets for carbon sequestration but in fact reflect a particular vision for future land use development that is out of the State of California's purview and jurisdiction. CARB should clarify how it can realize these conversion and conservation targets, critical for both carbon sequestration *and* vehicle miles traveled (VMT) reduction. It is possible that local governments will adopt and approve more aggressive growth plans and these targets will not be realized, thus resulting in lower levels of carbon sequestration on these landscapes. It may be helpful to have an explicit discussion of these land conversion targets, acknowledge risks and uncertainties, and provide suggestions of potential policy levers or incentives that can encourage conservation and avoided land conversion.

Policies and strategies to keep croplands in production are also critical for food security and the California agricultural economy and workforce. One potential policy lever is to build on the success of the Williamson Act and provide additional funding and tax breaks for landowners that adopt carbon sequestration activities in addition to keeping working lands in production. We also support the proposed development of the California Carbon Sequestration and Climate Resiliency Project Registry, as required by SB 27, to further carbon storage on natural and working lands.

- **Natural and Working Lands Proposed Scenario, p65:** We recommend increasing the levels of action for Wetlands and Croplands in the Proposed Scenario to higher levels, such as in Alternative 1. It may be necessary to increase carbon sequestration on as many landscapes as possible, to make up for the variability and uncertainty of carbon stocks on natural lands (referenced in pages 70-72), such as higher numbers of wildfires than anticipated. Moreover, increasing landscape carbon storage can offset potential challenges in other sectors, such as industrial processes. We are facing a climate emergency in which we need to increase ambition in as many sectors as possible. Finally, enhanced ambition for wetlands and croplands can help to support greater climate resilience, soil health, and food security for California, which will have only cascading benefits for the economy.

Similarly, the levels of ambition for Urban Forestry can also be increased, though not quite to Alternative 1 levels. This can be critical for climate resilience, public health, and other co-benefits for communities.

### Chapter 3

- **Estimated Direct Costs (p93-98):** It seems potentially misleading to compare the economic costs of the proposed scenario and alternatives to the Reference Scenario when the avoided costs and indirect benefits of the proposed scenarios and alternatives are not evaluated. As a result, the economic costs for the Reference Scenario are lower than they otherwise would be. A more comprehensive cost-benefit analysis would better

capture the benefits of the proposed scenarios and alternatives, through full quantification and monetization of public health and all socio-economic benefits. This would account for the social benefits of the Proposed Scenario and alternatives, allowing for a more fair and accurate comparison with the Reference Scenario.

## Chapter 4

Many of the strategies outlined for each sector are not strategies but targets or goals. Reframing would be helpful.

- **Transportation Sustainability – Strategies, p150:**
  - These strategies overlook the realities of market demand and consumer preference. There should be strategies to focus on enhancing and encouraging people and businesses to adopt ZEVs.
  - There should be a strategy to explicitly prioritize the implementation of charging networks and infrastructure in low-income and underserved communities.
  - Similarly, another strategy should explicitly prioritize incentive funding for businesses and residents in low-income and underserved communities to transition to ZEVs.
- **Vehicle Miles Traveled – Strategies, p156:**
  - “Reimagine new roadway projects that increase VMT in a way that meets community needs and reduces the need to drive.” This strategy appears to be vague and unclear; please clarify what is meant by “reimagine” in the transportation planning context, or provide greater specificity.
  - Main barriers to using transit is not solely affordability but network coverage, frequency, and convenience. People will only drive less when it is no longer the most convenient choice; however, most transit networks in the U.S. discount the value of time for low-income residents and condemn riders to long waits, convoluted routes, and slow travel. As a result, only those who have few other choices use transit, while the majority opt to drive. Transit networks that have high levels of ridership are able to compete with driving on time and convenience; in these cities, driving becomes inconvenient and expensive when compared to biking, walking, and transit. Critically, transit can only become the most convenient modes of transportation as a result of land use planning and street design, including planning for immediate development around transit stations and hubs. Transit improvements must occur in tandem with land use planning and prioritize user convenience, frequency, and coverage  

That said, affordability does still have a key role to play: for example, the high cost of transit and light rail mean that Bay Area residents will continue to drive to San Francisco over taking BART or Caltrain, even when bridge tolls and parking costs are factored in.
  - We encourage CARB to adopt the more inclusive term of *rolling* in addition to walking and biking. Biking is not accessible to all residents and may not feel safe for everyone. Rolling, on the other hand, includes wheelchairs, scooters, skateboarders, roller-skating, et cetera, as viable means of mobility and encourages cities and planners to consider street designs that can support all these modes.

- Similarly, we also encourage CARB to develop programs to support electric bike and electric scooters deployment, especially in underserved and under-resourced communities. Electric bikes can be more comfortable and accessible for many users, and allow people to travel for longer distances.
- It is interesting that these strategies make no mention of railways—neither High Speed Rail nor other local railway networks like Caltrain. We encourage the California Air Resources Board to discuss the anticipated role of the High Speed Rail, Valley Rail, and other railways and how it would impact transportation sector emissions.
- We also recommend the inclusion of an additional strategy for inter-agency coordination between CARB, Caltrans, and the California Transportation Commission on highway lane widening and highway expansion.
- Additional strategies, incentives, and policies are needed to increase infill development in local jurisdictions. Possibilities include linking state funding with achieving VMT targets, or streamlining or other incentives for eliminating single-family zoning.
- **Buildings – Strategies, p172**
  - The 2022-2023 Equitable Building Decarbonization program should include cool roofs and cool walls as part of all building retrofits, as they are cost-effective ways to reduce energy demand, mitigate peak demand, protect public health, reduce air-conditioning use, and support climate resilience, especially as extreme heat increases. Cool walls in particular are low-cost and can be easily implemented with greater ease, and have the greatest benefits for older buildings. Roof replacements can also be critical for public health, as many older homes may have leaky roofs that lead to a range of health challenges.
    - Beyond this program alone, cool roofs and cool walls should be incorporated into all building retrofit programs and incentives.
  - There should be more specific and explicit strategies for retrofitting existing buildings, a core part of building decarbonization. Many local climate action plans and other plans establish broad goals to retrofit existing buildings, but the high costs and inconvenience to residents, as well as split incentives between landlords and renters, mean that retrofits are not occurring at the pace necessary. Incentive funding is often insufficient to overcome the upfront costs as well as the disruptive nature of the work.
  - Financing plans, strategies, and assistance are necessary for not only low-income residents, due to the high cost of living, and in particular housing, in California. Many middle-income residents in the state continue to struggle with housing costs and may have limited funds available for the high costs needed to retrofit or electrify a home. To achieve greater, and more rapid, decarbonization of our existing building stock, a range of financing options and incentives should be available across a greater range of income levels.
- **Landfill Methane Strategies, p189**
  - CARB and/or CalRecycle should provide guidance and assistance to balance the tension between the need to rapidly scale up local composters and anaerobic digesters to meet SB 1383's organic waste diversion goals, and the need of local air districts to meet national and California air quality standards. As the Scoping

Plan notes, California currently needs 8 million short tons in composting and anaerobic digester capacity to meet SB 1383 organic waste goals. Due to the nature of waste management, these facilities will need to be localized around the state and will be permitted by local air districts. The need to meet best management practices may make it difficult for these facilities to develop a viable business model, even as local governments face high implementation costs for initiating organic waste separation and collection.

- **HFCs, p102**

- We see opportunity to accelerate phase out all HFCs to low-GWP alternatives, including through new regulations. The described process (p192) to update building codes to allow for the use of low-GWP across multiple building code update cycles is too slow and should be accelerated – moreover, the building code should be framed in a technologically neutral way that is not tied to specific refrigerants but to performance. As each building update cycle takes three years, and the buildings constructed during each cycle lasts decades, it is urgent that CARB coordinates with the California Energy Commission to condense all necessary changes to allow for the use of low-GWP refrigerants into the 2025 building energy efficiency standards. The International Electrotechnical Commission, which sets safety standards for appliances globally, has already approved the use of higher amounts of hydrocarbon (natural) refrigerants in heat pumps and air conditioners. We urge that California follow suit and adopt these standards in the next iteration of the building code.

In addition, tradeoffs between increases in energy use and low-GWP refrigerants may be necessary in the short-term to avoid baking in higher-emitting refrigerants now, for decades. As the Scoping Plan clearly acknowledges that high-GWP HFCs are rapidly increasing in California and are predicted to be among the last persistent GHG emissions source, we urge CARB to prioritize, scale up, and accelerate actions to phase out HFCs as quickly as possible.

- **Anthropogenic Black Carbon Strategies, p194:** An additional strategy should provide financial assistance to low-income residents that rely on woodstoves for basic heating.
- **Strategies for Achieving Success: Crosscutting Items for all NWL, p202:**
  - Supporting the second-to-last bullet, increasing opportunities for private investment in nature-based climate solutions, can be critical to help generate California-based offsite mitigation for CEQA purposes. We urge CARB to provide guidance, quantification methodologies, and model programs to help private investors or developers fund local projects such as wetland restoration or healthy soil projects, including for CEQA mitigation or other reasons.
  - An additional recommendation should include working with rural residents and rural communities to help generate local jobs and develop local markets and industries for forest biomass products. Listening to the input of rural communities and ensuring their meaningful participation can help increase their support, especially in regions historically opposed to government intervention.
- **Developed Lands Strategies, p213:** We urge CARB to include strategies to help increase park space and green space in underserved and low-income communities. We also recommend to scale up programs to reuse wood from local trees, like the Sacramento Tree Foundation's Urban Wood Rescue Program, which helps to keep urban trees out of landfill and avoid the loss of their embodied carbon. Across the US, 36

million urban trees are cut down or die each year, with the majority ending up in landfill. Adopting urban wood rescue programs throughout California cities can help create local jobs, generate local resources at a time when raw materials are rising in cost, support local makers, and encourage sustainable buildings (e.g., wooden buildings) as an alternative to steel or cement.

## Appendix D

In general, Appendix D focuses only on new development and CEQA. These are critical issues but this section should also address the full suite of functions and responsibilities of local government, including the existing built environment, buildings, roads and mobility networks, transit networks, waste management, and more.

### Section 1:

- **Page 1:** We recommend referencing the full name of the CAPCOA Handbook in the text itself to avoid confusion with the 2010 edition of the Handbook as well as other published CAPCOA guidance. If the full name is too long (“Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity: Designed for Local Governments, Communities, and Project Developers”), consider using “2021 CAPCOA GHG Handbook” as an alternative.
- **Footnote 6, p1:** We also suggest changing the reference link for the Handbook to: <https://caleemod.com/handbook/index.html>. This is a more stable URL and user-friendly website, allowing users to access different chapters directly, and will feature future updates such as a searchable database of measures.
- **Section 1.1, p3:** Other motivations and benefits for reducing VMT, other than the excellent reasons already listed, include improving public health and equity through supporting active transportation

### Section 2:

- **Climate Action Plans, p2-3:** Many local governments consider the development of a GHG inventory, GHG reduction plan, or climate action plan (CAP) prior to adopting and implementing GHG reduction measures, a process acknowledged by Appendix D to be costly. We recommend that Appendix D provide clear guidance to local governments on selecting and implementing GHG reduction measures independently of a CAP, and provide examples from local governments that have done so, such as through ordinances, zoning changes, or other regulations. It may be potentially helpful to outline the benefits that local governments can realize through implementing GHG reduction actions independently of a CAP. While the development of a GHG emissions inventory, forecast, and reduction target allows for climate action within a quantifiable framework, not all local governments have the resources or capacity to do so, and arguably, we have sufficient understanding of climate change to identify key contributing sectors to emissions without each and every city conducting its own analysis. Model measures, ordinances, and other actions can provide a ready toolbox for local governments ready to implement climate actions independently of a full CAP process.
- **Table 1, p5:** These policies are broadly applicable and very high-level. Providing example regulations or model ordinances that cities and counties can adopt may be helpful. For example, cities have adopted varying strategies to electrify new and existing buildings, such as point-of-sale and rental inspection ordinances.

- **Transportation Electrification:** For Strategy #2, we recommend this strategy be more specific about actions needed to create a ZEV ecosystem, e.g., clarify which permits are being streamlined, specify “charging infrastructure” instead of “infrastructure”, and provide examples of preferential parking policies or charger installation requirements for new development (e.g., adopt CalGreen Tier 2).
- **Transportation Electrification:** We also recommend a technology-neutral approach and include strategies for hydrogen refueling infrastructure, which can support industrial or heavy-duty equipment.
- **VMT Reduction:** For the fifth strategy under VMT reduction (“Amend zoning and development codes...”), we recommend also including transit-oriented development and affordable housing near transit in the list of desired developments. We also suggest eliminating single-family zoning as an additional strategy
- **Building decarbonization:** Table 1 is supposed to contain the most impactful, priority strategies, but it also contains some lower-impact measures such as smart power strips, occupancy sensors, and consumer education, etc. We suggest removing this to keep the focus on high-impact actions. This comment applies to other sectors as well.
- **Building decarbonization:** Additional strategies in this section could include cool walls and cool roofs (reduce building energy load and provide heat resilience), and promoting or streamlining permits for passivhaus designs or other net-zero building designs.

### Section 3:

- **Project attributes that reduce GHGs, p10:** For the attribute-based approach, please clarify if a project must have all listed attributes to prove consistency, or if there is a minimum number of required attributes. If only a minimum number of attributes are required, we suggest that CARB designate the most critical ones as mandatory/non-negotiable to ensure they are included in all projects.
- **Net zero, p12:** Citing Newhall Ranch and Tejon Ranch as examples of net-zero development is a dubious choice—especially as they explicitly contradict many of the most critical attributes in the attribute-based approach. While they utilize a net-zero approach to their CEQA analysis, many characteristics of these developments are contrary to best practices in climate-smart, low-VMT land use planning. The proposed mitigation is not without uncertainty: for example, EV charger installations are not guaranteed to translate into 100% uptake by residents, and moreover, they rely upon out-of-state (and out-of-country) ex ante GHG credits for offsets.
- **Clarity on local offsets and double-counting, p17:** Please provide greater clarity on local GHG offsets and double-counting against the State of California’s other regulations on climate change. For example, page 17 notes that EV charging can be a source of voluntary credits, but this would appear to be double-counting against the Low Carbon Fuel Standard credits claimable by utilities or fleets operators.
- **Regional collaboration as a support for developing voluntary local mitigation market, p20:** This idea appears to be in need of further development and discussion with potential participants. Such a collaborative would depend upon bringing together stakeholders that rarely speak to each other, and even then, would not be well positioned to address some of the core barriers of developing local mitigation projects,

including high costs (for both project development and verification), and economies of scale. The higher costs of local mitigation projects mean that ultimately, even well-intentioned projects and local governments will often choose a lower-cost out-of-state or international project for their GHG mitigation.

## Appendix E: Sustainable Communities

- Comments in [separate document](#).

## Appendix F: Building Decarbonization

- **Appliance and Equipment Capital Costs, p11:** It may be worthwhile to caveat the timeframe of the cost analysis as appliance costs may change with market trends and technology development.
- **Consumer Adoption and Awareness, p21:** This section should also analyze and address potential cultural preferences for different types of appliances (e.g., gas stoves), which can further the challenge of appliance electrification among low-income or immigrant communities. Additionally, this section should also evaluate potential preferences among different commercial sectors, such as restaurants.
- **Focus more on net-zero buildings, not only electrification:** Building electrification must be coupled with strong policies to support energy efficiency and net-zero construction to reduce peak loads, manage demand, and reduce energy costs. Even when all appliances are electrified and zero-emissions, there still remains a high need to reduce overall energy consumption to support grid resilience, especially during summer peaks. Building standards should not only be focused on on-site zero emissions but minimize overall energy consumption.
  - The next update of Title 24 should incorporate mandatory cool roofs in all climate zones (currently, cool roofs are only part of the prescriptive requirements and in limited building zones, but will be beneficial in all climate zones as extreme heat increases).
  - Title 24 or CALGreen should further spur and encourage the use of passivhaus design standards to minimize the use of energy
- **Develop Zero-Emissions Standards for Appliances, p28:** The draft measure for the 2022 State Strategy for the State Implementation Plan targets zero-emissions new space and water heaters, yet it is natural gas ranges that contribute most to indoor air quality, impacting public health, especially for under-served residents. A zero-emissions standard for cooktops and ranges should also be adopted and implemented. In Europe, induction ranges are already comparable in cost to gas ranges, adoption is widespread, and customer satisfaction is high. CARB should develop a statewide plan to help spur induction range deployment, including through outreach, education, demonstrations incentive programs, and partnerships with existing and new manufacturers.
- **Expand Use of Alternative Refrigerants, p31:** We would like to see greater specificity on CARB's existing regulations and planned future actions to eliminate high-GWP refrigerants.
- **Expand Incentive Programs to Support the Holistic Retrofit of Existing Buildings, Especially for Priority Populations, p35:** We support CARB's call to establish a

holistic, accessible retrofit program that addresses habitability, health, resilience, energy, and electrification together. Furthermore, this kind of program should be combined with local job training programs to expand the energy efficiency workforce.

- **Cool roofs and cool walls** should be a part of all retrofit programs, not only for underserved residents, for their role in reducing building energy loads (and thus saving energy costs), improving occupant health and comfort, reducing the need for air-conditioning, reducing peak demand, and reducing urban heat island effects.
- **Expand Education Efforts, p38:**
  - Tesla did not become the bestselling car in California because people care about greenhouse gas emissions or purchasing an electric car, but because of a hyped brand name and a quality driving experience. Similarly, people will be more interested in induction stoves when it's associated with aspirational lifestyles (via social media or advertising, for example) and when they learn about its greater ease of use (e.g., easy to clean). Likewise, most people ultimately do not care what fuels their space or water heater as long as it delivers seamless comfort. Thus, public outreach around electric appliances should focus less on health, air quality, climate, resiliency, etc., but on the intangible perceptions of quality that drive human desire.
  - In addition to incentives to support adoption, streamlining of permitting may also help encourage electrification. For example, local governments require building permits to replace water heaters, but they could provide a reduced permit fee for a sustainable water heater.
  - An important argument for commercial kitchens may be retention of kitchen staff: working over gas ranges is hot and exhausting, particularly in the summer, while induction stoves can offer a much cooler cooking environment.

We thank you for the opportunity to review and provide comment on the Draft 2022 Scoping Plan Update. As California leads the world in climate change action, undoubtedly the strategies and approaches outlined in this document will cascade across jurisdictions and borders—making it all the more important we find the right path forward.

Should you have any questions about these comments, please contact Paul Philley ([pphilley@airquality.org](mailto:pphilley@airquality.org); 916-747-2966) or Shelley Jiang ([sjiang@airquality.org](mailto:sjiang@airquality.org); 279-207-1132). The Sacramento Metropolitan Air Quality Management District looks forward to working with CARB to achieve and realize our climate change goals.

Sincerely,



Shelley Jiang  
Climate and Land Use Section  
Sacramento Metropolitan Air Quality Management District