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December 14, 2017

Chair Nichols and Members of the California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on the 2017 Climate Change Scoping Plan

Dear Chair Nichols and Board members,

On behalf of our 86,000 supporters in the Golden State, including 3,700 scientific experts, the Union of Concerned Scientists (UCS) is pleased to submit our comments on the 2017 Climate Change Scoping Plan (or Plan). Overall, we support the Board's adoption of the Plan. We also believe that that are a few places where the Plan should be strengthened to ensure we achieve the SB 32 greenhouse gas (GHG) emission limit.

We thank you and the staff at the California Air Resources Board (CARB) for your efforts over the past two years to develop an ambitious roadmap for California to meet its 2030 emission reduction limit. We appreciate that the Plan requires emission reductions from across the California economy, and, if policies or measures in the Plan cannot be implemented because of "lack of federal action," it commits to achieving those reductions via alternative measures in those same sectors rather than transferring the responsibility to another sector or the cap-and-trade program. UCS agrees with the Plan's overall approach of relying on a combination of sector-specific policies across the California economy and a post-2020 cap-and-trade program.

Our comments build upon our previous comment letters from December 2016 and April 2017, which we have attached for reference. We hope CARB will consider further action to address these issues as implementation of the Plan and related regulatory processes moves forward since they represent feasible and effective opportunities to not only reduce emissions from the transportation and energy sectors, but also achieve important air quality benefits while reducing reliance of the Plan on cap-and-trade to meet the SB 32 limit.

Fuel Switching from Fossil Natural Gas to Clean Electricity

UCS believes it is appropriate for the Plan to look to the Integrated Resource Planning process under SB 350 as the primary vehicle for planning how the electricity sector will reduce its GHG emissions. We are following this process closely. We also appreciate that the Plan continues to recognize the importance of a regional energy market and the development of energy storage by including measures on each.

The Plan acknowledges that fuel switching from natural gas to renewable electricity is an important strategy to reduce emissions throughout several sectors of the economy. CARB does not however include

fuel switching from gas to clean electricity as a strategy to reduce the use of gas. Instead, the Plan says “GHG reduction strategies (for fossil-fuel-based natural gas) should focus on efficiency, reducing leakage from wells and pipelines, implementing the SLCP strategy, and studying the potential for renewable gas fuel switching (e.g., renewable hydrogen blended with methane or biomethane).”¹ This is a significant omission, especially given the amount of GHGs associated with using fossil-based natural gas to heat and cool air and water in residential and commercial buildings. **Instead, UCS believes the Plan should specifically call out and emphasize the ability to reduce fossil-fuel based natural gas by fuel switching to clean electricity in residential and commercial buildings as a necessary strategy for achieving the GHG reduction goals required by SB 32.**

Electrification of Drayage Trucks

UCS thanks CARB staff for addressing our previous comments on autonomous vehicles (AVs) in the updated Scoping Plan Scenario. The new *Ongoing and Proposed Measure – Vehicle Technology*² will establish a process for coordinating state agency and local and regional transportation efforts on research, development, and implementation of AV policies. The revised text of the *Vibrant Communities and Landscapes / VMT Reduction Goals*³ clarifies that the state is committing to preventing potential emission increases from more widespread AV deployment. We look forward to working with CARB to develop strategies to implement this commitment.

Another area that will be critical to meeting California’s climate goals is the electrification of medium- and heavy-duty vehicles. Trucks and buses make up just 7 percent vehicles in California, but 20 percent of GHG emissions from the transportation sector, 33 percent of NOx emissions from all sources, and emit more particulate matter than all the state’s power plants.⁴ Drayage trucks are particularly ripe for electrification due to the local and regional nature of their operations delivering cargo containers to and from ports and warehouses in California. There are roughly 20,000 drayage trucks operating in the state.

We continue to recommend CARB commit to developing standards for the adoption of battery and fuel cell electric drayage trucks, which we initially recommended in our April 2017 comment letter. Its omission in the Plan remains a deficiency. Several recent developments provide additional justification for pursuing a standard for zero-emission drayage trucks. Notably:

- In August, the diesel engine maker Cummins unveiled a Class 7 battery electric truck with a range of 100 miles, available in 2019. The company cites local delivery and drayage truck sectors as target customers. The truck could have up to 300 miles of range with a larger battery pack than the prototype and up to 500 miles of range if coupled with a combustion range extender.

¹ See page 66 of the Plan

² The new *Ongoing and Proposed Measure – Vehicle Technology* is “Implement a process for intra-state agency and regional and local transportation coordination on automated vehicles to ensure shared policy goals in achieving safe, energy efficient, and low carbon autonomous vehicle deployment that also contribute to VMT reductions”

³ The *Vibrant Communities and Landscapes / VMT Reduction Goals* is updated to read “Promote potential efficiency gains from automated transportation systems and identify policy priorities to maximize sustainable outcomes from automated and connected vehicles (preferably ZEVs), including VMT reduction, coordination with transit, and shared mobility, and **minimize any increase in VMT, fossil fuel use, and emissions from using automated transportation systems.**” (Bolded text is consistent with UCS comments.)

⁴ Chandler, S., J. Espino, and J. O’Dea. 2017. *Delivering opportunity: How electric buses and trucks can create jobs and improve public health in California*. Cambridge, MA and Berkeley, CA: Union of Concerned Scientists and The Greenlining Institute. Online at www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf.

- In October, Daimler announced a battery electric Class 8 truck that will have 217 miles of range while hauling 11 tons. Toyota began operating its Class 8 hydrogen fuel cell electric truck at the Ports of Los Angeles and Long Beach, delivering cargo to warehouses as far as 100 miles away.
- In November, Tesla revealed its electric Class 8 truck, with a range of 500 miles, fully loaded at highway speeds. Production of the truck is expected to begin in 2019. The Ports of Los Angeles and Long Beach also approved a plan that projects the majority of trucks serving the ports will be zero-emission vehicles by 2036.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) is a core emissions reduction strategy for California's transportation sector. The current target of 18 percent reduction in carbon intensity for 2030 remains too low. **Rather, a target of at least 20 percent in 2030 would be more appropriate.** In particular, we are concerned that the program as proposed lacks adequate ambition in the later years, between 2025 and 2030. Stringency standards that accelerate through the compliance period and reach final targets well above 20% are the best way to balance near term constraints on low carbon fuel availability with the long-term potential and support steady progress over the whole term. We look forward to submitting analysis, together with some partner groups, in the weeks ahead, laying out in detail what future stringency targets are feasible, with the goal of supporting steady investment in progressively cleaner fuels to meet the evolving needs of the California transportation sector.

UCS refers Board members and CARB staff to our previous comment letters (see attached) for our rationale for strengthening other energy and transportation-related measures through upcoming regulatory processes to secure additional GHG reductions and air quality benefits, including the post-2025 Advanced Clean Car Standard. We are closely following the LCFS update and the Advanced Clean Local Trucks rule to ensure they reflect the targets that we highlight in this letter. Inclusion of stronger targets in the Scoping Plan would provide clear direction to guide these processes.

Cap-and-Trade Program

Given the significant reliance of the Scoping Plan Scenario on a successful cap-and-trade program to reach the 2030 limit, it is essential that the program is designed to achieve the reductions necessary to meet our SB 32 requirements and put California on a pathway to decarbonize the state's economy by mid-century. Currently, the Plan allocates nearly 40 percent of the necessary cumulative reductions by 2030 to cap-and-trade. This number could become even larger during implementation since cap-and-trade is intended to serve as a backstop for sector-specific GHG reductions that are "not realized due to delays in implementation or technology deployment."⁵

As CARB amends the cap-and-trade program pursuant to AB 398 (E. Garcia, 2017), two issues loom as significant determinants of the program's success. First, **CARB must set a stringent price ceiling for allowances that is set high enough to incentivize research, development, and deployment of clean technologies.** Without a sufficient price ceiling, the program will not drive needed investment in emission reduction measures.

Second, AB 398 requires that CARB "evaluate and address concerns related to overallocation" (HSC 38562(c)(2)(A)). Research by Energy Innovation suggests that a growing stockpile of banked allowances

⁵ See page 26 of the Plan.

could easily equal 30 to 40 percent of emission reductions under the cap-and-trade program between 2021 and 2030⁶. **This bank of allowances threatens the ability to meet our statewide 2030 GHG emission limit. We encourage CARB to seriously consider adjusting the number of future allowances supplied to the market to address these risks.**

Other

Climate change will impact key sectors in the Scoping Plan, such as energy, transportation, and water, affecting their ability to deliver key services and placing our safety, quality of life, and economy at risk. It could also affect a sector's ability to help achieve the 2030 and 2050 goals. The Plan acknowledges that EO B-30-15 requires state agencies to prioritize actions that both reduce GHG emissions and build resilience. It also includes the following language in the Transportation Ongoing and Proposed Measures section: "Take into account the current and future impacts of climate change when planning, designing, building, operating, maintaining, and investing in State infrastructure, as required under Executive Order B-30-15." We recommend that similar language be included in the energy section as well.

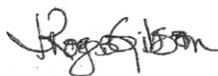
We also welcome CARB's commitment in the Plan to better engage environmental justice communities and "further institutionalize environmental justice and social equity" in its work. As implementation of the Plan proceeds, we urge CARB staff to ensure it addresses the needs of these communities in a way that maximizes health-related and other benefits from emission reductions through measures that are specific and developed in a consultation with communities.

Conclusion

California's continued climate leadership through its ambitious actions to reduce GHG emissions has never been more important, especially since federal actions may stall important GHG emission reduction efforts nationally. Recent devastating extreme weather events in California – from catastrophic floods following a historic five-year drought to deadly heatwaves and the most destructive and lethal wildfires in the state's history – provide a stark reminder of the urgency to act boldly now, since the best science tells us they will become increasingly frequent and severe due to climate change.

UCS supports adoption of the Plan while also recommending that several strategies and measures be updated to take advantage of opportunities to achieve additional emissions reductions from the transportation and energy sectors, which we've outlined in this letter. In doing so, CARB will strengthen the groundwork the Plan is laying towards establishing an effective path forward to achieve its goals of a thriving low-carbon economy, healthy and vibrant communities, and a clean environment.

Sincerely,



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⁶ Busch, Chris. 2017. Oversupply Grows in the Western Climate Initiative Carbon Market. San Francisco, CA: Energy Innovation. Online: <http://energyinnovation.org/wp-content/uploads/2017/12/Oversupply-Grows-In-The-WCI-Carbon-Market.pdf>

The following UCS experts contributed to these comments and are available for further discussion:

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