May 31, 2022

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

RE: Hyundai's Comments to the California Air Resources Board's Proposed Advanced Clean Cars II Regulations

Dear Chair Randolph and Members of the Board:

Hyundai Motor America and Hyundai America Technical Center, Inc. (together "Hyundai") appreciate the opportunity to comment on the California Air Resources Board's ("CARB") Advanced Clean Cars II proposed regulation ("ACC II").[1]

Our parent, Hyundai Motor Company ("HMC"), builds and sells a full suite of clean powertrain vehicles including hybrid, plug-in hybrid, battery ("BEV"), and hydrogen fuel cell ("FCEV") electric vehicles. HMC accomplished this by making early and ongoing significant investments into battery and hydrogen fuel cell technology because it understands that no single technology is the solution to achieving zero emissions. Moreover, HMC's investments will help enable its 2045 carbon-neutrality commitment as well as CARB's emission reduction goals.

Hyundai supports the ACC II proposal, which is unprecedented in its intent and effect to significantly reduce vehicle emissions. Achieving ACC II's goals necessitates key policy and regulatory facilitators that provide manufacturers with flexibilities to allow the industry to timely deliver these important emission reductions. Accordingly, Hyundai offers the following constructive comments on CARB's proposal and welcomes the opportunity to work with CARB staff on these important issues.

Durability

Hyundai agrees with the Alliance for Automotive Innovation's ("AFAI") comments regarding the proposed durability requirements. Achieving the durability requirements as proposed would require significant industry investment in research, development, and implementation, which

[1] The ACC II proposal includes the documents contained in the "Public Hearing Notice and Related Material" posted on April 12, 2022, at https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii.

Hyundai Motor America 10550 Talbert Ave Fountain Valley, CA 92708 T + 714 965 3000 F + 714 965 3816 www.hyundai.com

would ultimately result in increased vehicle pricing for consumers. While increased vehicle costs are a near certain outcome of imposing such requirements, the corresponding benefits to consumers are uncertain. For example, the industry has raised concerns regarding the accuracy of a range metric in reporting the durability of a battery, in part due to uncertain external factors (such as ambient temperature and aggressive driving) that can influence range/degradation. As CARB acknowledged in its Initial Statement of Reasons ("ISOR"), the battery industry, researchers, and Original Equipment Manufacturers ("OEMs") are already making steady improvements in vehicle and battery durability, commensurate with a pace that will not impose unnecessary and significant costs onto consumers. CARB should allow the industry to continue to innovate and make steady progress in a naturally competitive market, rather than force overly burdensome requirements on the industry. Superior battery range and durability are critical selling points for EVs—the industry will naturally strive for improvements in these areas without the need for restrictive regulatory requirements (as evidenced by the various example OEM marketing statements and announcements cited by CARB in the ISOR). EVs are already much more costly than internal combustion engines ("ICE") vehicles, and to reach the mass market, prices need to be affordable for everyone. CARB's stated intent with these new requirements is to boost customer confidence; however, the resulting increased cost may have the opposite effect, disincentivizing customers from purchasing EVs, which would keep ICE vehicles on the roads longer and further disadvantage priority communities. Consistent with the comments of AFAI, we request that CARB align its proposed durability requirements with the United Nations Economic Council of Europe ("UNECE") Global Test Requirement ("GTR") EV battery durability requirements through 2030MY or beyond.

Data Standardization

Hyundai strongly agrees with AFAI's comments and proposals regarding CARB's proposed data standardization requirements. CARB's proposal requires OEMs to collect and store vast amounts of data, develop and implement new vehicle display requirements, and install common diagnostic connectors and communication systems, among other items. These new and onerous requirements would require significant time and financial investment and are therefore likely to increase the cost of these low- and zero-emission vehicles at a time when affordable pricing is most critical. We urge CARB to reconsider portions of the proposed data standardization requirements in accordance with AFAI's comments, which aim to achieve a balance between CARB's data standardization goals and the resulting cost of implementing such requirements.

Travel Provision

Hyundai strongly believes that both BEVs and FCEVs will be needed to meet the State's emission reduction goals. We continue to see customer demand for FCEVs increasing as awareness of this technology begins to gain traction. Last year, Hyundai saw record NEXO FCEV SUV sales, signaling consumer appetite for FCEVs. We also know that hydrogen vehicles fit a customer profile more familiar and comfortable with gasoline vehicles, specifically due to their short refueling time and

similar refueling process. However, the necessary hydrogen infrastructure has been unable to keep up. California as well as the ZEV states currently lack the widespread hydrogen refueling station network to support broad adoption of FCEVs, which limits where OEMs can sell these vehicles. Greater compliance flexibilities for these vehicles will help offset the impact that limited infrastructure has on the business case for FCEV production growth.

In addition, as FCEVs are trying to catch up with BEVs by the end of this decade, further support for the technology is needed. We seek continuation of the FCEV travel provision in the final ACC II regulation. This flexibility helps the business case for FCEVs by reducing the financial and logistical disadvantages FCEVs are expected to have over BEVs during this time period. This provision will allow Hyundai to meet the growing customer demand, maintain a technology agnostic approach to democratize ZEV adoption, and make it more financially equitable to sell FCEVs.

To gain support for extending the FCEV travel provision, we further propose that the travel provision sunset after 2030 model year, be capped to 10% of an OEM's annual requirement, and be phased-out proportionally as infrastructure in Clean Air Act Section 177 ("S177") states catches up to the California baseline of hydrogen readiness. During the course of our discussions with the S177 states, inclusion of the travel sunset, cap, and phase-out were greeted positively and abated their concerns with the travel provision. For these reasons, we strongly request that CARB include the FCEV travel provision through 2030 in the final ACC II.

Pooling

We appreciate the proposed pooled vehicle flexibility, as we believe it will help enhance overall ZEV market development. However, because we expect many new states will choose to adopt ACC II, we request the following additional flexibilities: 1) eliminate the shortfall requirement, 2) extend pooled credits allowance to future model year compliance (e.g., excess 2026MY credits can be pooled and carried forward to offset 2027MY shortfall) and 3) increase the pooling cap to 30% in 2026 model year while maintaining the 5% annual phase out to expire in 2031 model year. This is because new ZEV states tend to have significantly lower new ZEV sales than ZEV states. Additionally, the infrastructure to support the 30% sales mandate in 2026 model year is lacking in the majority of prospective S177 states and will take time to develop. In the interim, our proposal provides OEMs with sales flexibility through this decade (i.e., 2030 calendar year) while these newer EV markets mature.

Pre-2026 Model Year Credits

Hyundai appreciates the flexibility provided to convert pre-2026MY credits to vehicle values and understands CARB's intent to limit the stockpiling of credits. However, due to the stringency of the regulation, we request additional flexibilities. Please consider 1) an allowance for banking and trading pre-2026MY credits in the years where the manufacturer over complied with a 4-year life, 2)

removing the shortfall requirement, and 3) including an optional allowance for manufacturers to use a cumulative cap for 2026-2030 model years, per AFAI's proposal.

Early Compliance Vehicle Values

Hyundai proposes to allow the earning of early compliance vehicle values to begin three years prior to implementation and extend the use of the values from 2028 through 2030. Allowing manufacturers to earn early compliance vehicle values three years prior to implementation will further serve to encourage rapid adoption of these low- and zero- emission vehicles on an even more compressed timeline, and would also reward early investors and adopters of such technologies. Additionally, extending the use of these values through 2030 would provide added incentive for early compliance and is consistent with the general trend of an established 2030 sunset date for other flexibilities.

Environmental Justice Vehicle Values

Hyundai shares CARB's desire to advance environmental justice and equity for all Californians to have clean air, and it agrees with CARB's intent to accomplish this goal by optionally offering additional environmental justice ("EJ") vehicle values. Hyundai supports AFAI's comments including the extension of credit life through 2034 model year. Additionally, Hyundai would like to draw specific attention to the proposed option to establish an alternative EJ value pathway that specifically targets priority communities. This alternative pathway would be subject to specific criteria to ensure robust and meaningful results, and would require CARB's Executive Officer approval.

As the auto industry and infrastructure evolve to support zero emission vehicles, the flexibility to allow manufacturers to propose a meaningful alternative pathway would be most beneficial, as new opportunities may arise that cannot be foreseen (i.e., alternative ownership structures). We propose establishing this alternative EJ value pathway to allow a manufacturer to submit an application to CARB that would include details of the alternative program and metrics/data to demonstrate compliance with specific criteria, such as a statement of need and justification for adopting an alternative program. EJ values would be given based on the manufacturer's sufficient demonstration that the approved criteria are achieved. We suggest that within six (6) months of the effective date, CARB could convene a working group to develop additional details for OEM alternative proposals and subsequently issue corresponding guidance for implementation. Hyundai welcomes the opportunity to further discuss our proposed alternative EJ value pathway with CARB and other stakeholders.

Policies Beyond the Regulation

To increase market penetration of ZEVs, there must be supportive policy enablers. We need policy

that provides funding to build more charging stations that can reach all Californians. This includes priority communities, rural communities, and those without the ability to charge at home (i.e., multi-unit dwellings) or the workplace. Similarly, funding is desperately needed for light-duty hydrogen refueling stations and corresponding infrastructure development for FCEVs. Expanded market share of FCEVs will be necessary in addition to BEVs to meet CARB's emissions reduction goals. Hydrogen vehicles are a more viable option for many Californians, especially those that cannot charge at home or whose lifestyle requires a refueling time commensurate with gasoline vehicles. In addition, various entities such as state and local municipalities, the CA Public Utilities Commission, CA Air Districts, and others need to expand incentive programs such as rebates, tax credits, grants, and affordable pricing for charging and refueling BEVs and FCEVs. These incentives have waned over the last couple of years. The lack of battery recycling and grid resiliency concerns need to adequately be addressed. To increase market acceptance, there needs to be more funding for consumer education. We also request that CARB support bills that are technology neutral. Hyundai welcomes the opportunity to collaborate with CARB to craft these policies with insight and input from an automaker's perspective.

General Comments

Hyundai has a full lineup of clean vehicles, and even with our competitive position in the market with respect to low- and zero-emission vehicles, compliance with this rule as proposed will be very challenging and costly. Moreover, the world is facing many real disruptions that, practically speaking, intensify the proposed ACC II rule's stringency. For instance, supply chain and raw mineral constraints, neither of which are accounted for in the ISOR, have drastically inhibited production and technological progress by the industry as a whole. In addition, the chip shortage has impacted the auto industry and beyond and has amplified the impact on advanced technology vehicles. Per AFAI's "Reading the Meter" May 11, 2022 article, industry-wide US production is down roughly 19%, while sales are down roughly 15% compared to pre-pandemic levels. Hyundai projects that such disruptions will continue through at least the 2023 calendar year and may likely extend further. Hyundai encourages CARB to take these significant constraints on the industry into consideration in this rulemaking, particularly with respect to proposed regulations that would require product/technology changes involving materials that are in short supply or would exasperate already strained development and production timeframes.

Infrastructure for electric charging and hydrogen refueling stations continues to present a very real challenge, not only for automakers, but also for consumers. A sizable turnaround is needed in a very short timeframe to support the amount of BEVs, PHEVs, and FCEVs that will be required to be on the roads with this new rule. Market demand is also a very tangible concern. The recent increase in ZEV sales (mainly due to the rising gas prices) has helped with customer awareness and acceptance of zero emission vehicles; however, there is still uncertainty if this trend will continue at all or continue at the rate needed and required by the new rule. Hyundai encourages CARB to consider these challenges in its rulemaking actions, including adoption of additional funding and

programs to encourage expanded infrastructure and consumer education.

Endorsement of Comments of AFAI

As a member of AFAI, Hyundai fully endorses the comments submitted separately by AFAI (in addition to those issues addressed specifically in this letter) on the ACC II proposal.

We thank you for the opportunity to comment on this important rulemaking and look forward to working with CARB staff in furthering our common goal of carbon neutrality.

Sincerely,

Yuval Steiman
Director, Eco-Compliance & Research
Hyundai Motor America

Ric Willard
Department Head, Regulation & Certification
Hyundai America Technical Center, Inc. (HATCI)