Comments of the

Motor & Equipment Manufacturers Association

to the

California Air Resources Board

on the

Proposed Advanced Clean Fleet Regulations

October 17, 2022

The Motor & Equipment Manufacturers Association (MEMA) represents more than 900 companies in the automotive and commercial vehicle supplier industry—the nation's largest sector of manufacturing jobs, employing more than 907,000 workers in all 50 states. More than 27,000 of those jobs are in the State of California.

The Motor & Equipment Manufacturers Association (MEMA) submits this feedback to the California Air Resources Board (CARB) on the proposed Advanced Clean Fleets (ACF) rulemaking. We appreciate CARB's determination to achieve electrified transportation and its associated infrastructure.

MEMA members supply components to original equipment manufacturers making advanced clean vehicles. In their critical role as suppliers, MEMA members develop and produce a multitude of technologies and wide range of products including complex, highly integrated vehicle systems to enable advanced clean vehicles. Suppliers are likewise committed to providing innovative, affordable, and accessible technologies needed to meet the Biden Administration's goal of economy-wide net-zero emissions by 2050.

MEMA members are on the front line of technology investment, taking on substantial risks by developing new and novel technologies. Portions of the ACF proposal risk overreliance on limited data and optimistic analytical projections regarding performance and feasibility. MEMA strongly encourages CARB to coordinate and harmonize the final regulatory provisions, to the extent possible, with national programs being developed by the U.S. Environmental Protection Agency (EPA). Harmonization, consistency, and certainty are critical to suppliers as technology investments become more diversified into a broader spectrum of propulsion technologies. Some transportation technologies relied on for CARB's analysis are still being developed, while others left out of the CARB solutions set are already deemed feasible.

MEMA provides CARB the following considerations to enable a more robust and meaningful ACF regulation:

- Timelines which respect technological capabilities and limitations;
- Alignment and harmonization with other emissions reduction programs;
- Equivalency in performance for future fleet vehicles;
- Technologically feasible solutions;
- Exemptions from ZEV mandate for certain medium- and heavy-duty applications;

- Enabling clean hydrogen and other alternative technologies;
- Workforce reskilling and retraining;
- Practicability of application and enforcement of ACF regulations; and
- Providing suppliers certainty to mitigate investment risk

MEMA Supports Achievable Technological Timelines

MEMA is concerned with the proposed timeline for the ACF regulations, particularly with respect to an all-ZEV mandate. Insufficient research has been made into examining and proving the technical projections for performance and availability of ZEV technology options. MEMA urges CARB to reconsider *and expand* on the alternative proposal from the initial statement of reasons (p260 of 296) which respects the challenges in converting all fleets and vehicle classes to ZEV. In particular, long-distance haul and other work applications vehicles must have both satisfactory driving range and perform work enroute or on arrival, often without opportunity to recharge or refuel. Hydrogen internal combustion engines (HICE) and other Near Zero Emission Vehicle (NZEV) technologies, such as e-fuels, can deliver the necessary performance and still significantly reduce emissions. CARB should include these technologies in the final ACF regulation.

MEMA Supports Alignment of State and National Emissions Reduction Programs

The timing of the ACF should be aligned with the timing of the ACT. The programs must work in concert to reduce Statewide emissions in a coordinated, technologically, and financially feasible manner. The proposed ZEV fleet requirements also appear to be out of alignment with other regions where environmental factors such as extreme cold are not currently practicable for ZEV, meaning California is not setting an example those regions can practicably follow.

MEMA Supports Equivalency of Performance

Currently available and emerging vehicle technologies each have their strengths and best use cases. With regards to medium-and heavy-duty applications, BEV and hydrogen Fuel Cell Electric Vehicle (FCEV) technology require significant improvement in range and performance before they can be considered equivalent to today's technologies. By focusing solely on BEV and FCEV options the subject ACF proposal does not provide equivalent performance capability in the projected replacements for today's relied-on diesel options.

Few or no ZEV choices exist for long-haul and heavy-duty applications today, especially vocational work trucks like cement mixers and dump trucks which need both travel range and ability to perform work during transit or on a job site. While opportunity exists to continue to reduce GHG emissions and criteria pollutants from medium- and heavy-duty engines and vehicles through the application of innovative technologies and fuels, a ZEV ACF standard cannot be guaranteed to meet fleet performance demands. NZEV hydrogen trucks provide an attainable and environmentally impactful solution for long-haul trucking demands and should be a key part of the ACF plan. If fuel-cell electric vehicles (FCEV) are later found to be gaining in sales and performance metrics faster than expected today, CARB could then revisit ACT and ACF targets. CARB should maintain the opportunity for NZEV technologies in both the ACF and ACT programs until ZEV technology catches up to today's demanded performance needs.

MEMA Supports Technologically Feasible Approaches

Additional vehicle technology options are needed to prevent loss of services and functionality in medium- and heavy-duty fleet vehicle applications while hydrogen fuel cell technology is improved. Hydrogen fuel cell technology must still overcome significant technical and durability challenges to be able to serve medium- and heavy-duty applications. During the transition to EVs and FCEVs, NZEV technology can help greatly reduce emissions to near zero while creating greater demands, and therefore, investments in needed hydrogen and alternative fuels infrastructure. As noted above, these alternative technologies which leverage ICE technology make use of extremely similar skill sets already present in the workforce trained to maintain fossil fuel engines. Low-emissions ICE technologies thereby provide a needed steppingstone to both applications demands and workforce retraining and reskilling.

MEMA Supports Exemptions for Certain Medium- and Heavy-Duty Applications

The ACF proposal would discontinue provisions which today permit Backup Vehicle, Daily Usage, Infrastructure Construction Delay, ZEV Unavailability and Mutual Aid Assistance exemptions[1] (except those defined as Emergency Vehicles). The challenges which contributed to these exemptions are not expected to dissipate. Therefore, without these special categorical exemptions, alternative (non-ZEV) technologies may not be available to meet those applications and prevent loss or reduction of services in these applications. The aforementioned exemptions should be continued until technology advances sufficiently to meet the special needs of those applications and ZEV options are fully developed and readily available.

MEMA Supports Clean Hydrogen Technology and Other Alternatives

The recently published CARB report "2022 Annual Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development"[2] confirms MEMA's concern that hydrogen fueling station construction predictions indicate insufficient supply. We refer to Figures ES-2 and following in the Annual Evaluation which forecast new station development leveling off after 2028. These projections indicate a critical need to ease overreliance on FCEV as an effective alternative to Battery Electric Vehicles after 2028. A reliance on electric and hydrogen vehicles may itself be overoptimistic, even if HICE is allowed. CARB should consider more carefully whether additional transitional technologies are needed, to allow infrastructure and workforce skill sets to catch up to both electricity and hydrogen needs.

MEMA Supports a Coordinated Workforce Skills Transition

NZEV technologies, like HICE, more closely resemble current ICE vehicles in terms of both technology and maintenance, making them doubly useful during fleet transition. Technicians familiar with ICE engine vehicles can pivot easily to NZEV while gaining skills and knowledge in working with more advanced technologies. Restriction of readily available alternate vehicle

[1] https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appa1.pdf
[2] https://ww2.arb.ca.gov/resources/documents/annual-hydrogen-evaluation

propulsion technologies for fleet maintenance programs may force out some mechanics whose economic and social situations do not allow opportunities to shift quickly into serving ZEV technologies. Including NZEV technologies in ACF could help ensure a more inclusive workforce during California's transition to zero emissions.

MEMA Supports Clear, Understandable Regulatory Requirements

MEMA believes it is not feasible to regulate fleets registered outside the State but "operated"[3] in California. The practicality of enforcement of an "operated in" requirement in CARB's proposal is unclear. MEMA urges CARB to remain consistent with other programs which focus on vehicles sold or registered in California.

MEMA Supports Certainty to Reduce Investment Risk

The current CARB ACF proposal lacks sufficient assurances to mitigate investment risks. CARB can readily reduce these risks by allowing NZEV technology options. The strong demands and desires for ZEV technology evidenced in the ACF proposal do not ensure that ZEV solutions are or will be technologically feasible. By leaning so far forward into two technologies (BEV and FCEV), the current ACF proposal is over reliant on technologies which have not been proven to be feasible for medium- and heavy-duty applications. If the optimistic analytical conclusions in the ACF proposal are not borne out, those who have invested resources in attempting to meet the ACF regulations will experience significant losses. Any future corrective program amendments, such as expansion of eligible technologies or easing the ACF regulation in some other way, will not recapture lost investments. The soundest proposal is one that incentivizes development of a wide array of emissions-reduction technologies without mandating specific solutions paths.

Conclusion

MEMA is committed to a shift towards significantly higher levels of electrified transportation and mobility while continuing to spur American innovation to drive us toward a broad spectrum of advanced technologies that can all play a part in meeting California's greenhouse gas (GHG) goals. As we transition, diverse advanced propulsion technologies are needed to provide the appropriate balance between consumer choice, performance, vehicle affordability, and strengthening of the American workforce. MEMA supports California's efforts to address the climate crisis and encourages CARB to leverage and deploy all technologies that offer a scalable solution.

MEMA urges CARB to ensure there is an overall comprehensive plan to prepare the industry and the U.S. for the advanced transportation future. Our strategic plan should include both supply- and demand-side policies that will help accelerate the development, manufacture, deployment, and purchase of these advanced technologies. These polices must respect the myriad demands placed on fleet vehicles – especially medium- and heavy-duty applications.

[3] Numerous instances of this reference occur in the ACF proposal. See, for example, the Appendix A-1-4 definition of "California fleet" which is proposed to be "the subset of vehicles in the total fleet operated by a fleet owner in California during a calendar year. If a vehicle is operated in California at any time during a calendar year, it will be considered part of the California fleet for the entire calendar year."

MEMA members strongly support investments to further develop our skilled workforce, including training to upskill workers, as these development needs are evolving with the transition to vehicle electrification.

Vehicle component suppliers take a leadership position and significant risk in planning advanced emissions-reduction technologies years in advance of deployment. Cohesive complementary policies are essential to support vehicle suppliers and California's GHG goals.

MEMA appreciates consideration of these comments.

For any questions or more information, please contact Alex Boesenberg, MEMA vice president of regulatory affairs at aboesenberg@mema.org