



**Comments of the
Motor & Equipment Manufacturers Association (MEMA)
to
the California Air Resources Board
RE: Advanced Clean Trucks Proposed Regulation
May 28, 2020**

Introduction

The Motor & Equipment Manufacturers Association (MEMA) submits these comments to the California Air Resources Board (CARB) on the “Advanced Clean Trucks” proposed regulation (ACT) to accelerate adoption of zero-emission vehicles (ZEVs) in the medium and heavy-duty (HD) truck sector while reducing emissions generated from on-road mobile sources.¹ MEMA appreciates the opportunity to provide recommendations and suggestions that will improve the ACT proposal and enhance the variation of technologies that can be implemented to help meet the state’s air quality goals.

MEMA² represents more than 1,000 companies that manufacture new original equipment (OE) and aftermarket components, systems and materials for use in passenger cars and heavy trucks. The motor vehicle components manufacturing industry is the nation’s largest direct employer of manufacturing jobs – employing over 871,000 workers in all 50 states – 31,190 of those jobs are in the State of California. MEMA members develop and produce a multitude of technologies and a wide range of products, components and systems that make vehicles safer, more efficient and reduce emissions. The automotive supplier industry provides solutions for clean mobility, including the technologies for ZEV. Suppliers are committed to providing affordable technologies needed to increase fuel efficiency and continue to reduce greenhouse gas (GHG) and criteria pollutant emissions from vehicles.

The HD transportation sector is responsible for a major portion of California’s emissions inventory, and these emissions are forecast to continue increasing, reflecting the anticipated impact of factors such as increased movement of freight by trucks, ships, and rail. An important opportunity exists to continue to reduce GHG emissions and criteria pollutants from medium- and HD engines and vehicles through the application of innovative technologies and fuels and California’s ACT standard would provide an

¹ <https://ww2.arb.ca.gov/rulemaking/2019/advancedcleantrucks>

² MEMA represents its member companies through its four divisions: Automotive Aftermarket Suppliers Association (AASA); Heavy Duty Manufacturers Association (HDMA); MERA – The Association for Sustainable Manufacturing; and, Original Equipment Suppliers Association (OESA).

important tool for accomplishing this by spurring the sale of ZEV and near zero-emission vehicles (NZEV) medium-and heavy-duty trucks.

MEMA provides the following recommendations for CARB to finalize a robust and successful ACT regulation. MEMA urges CARB to include the following in the ACT regulation:

- Performance-based metrics apart from the targets;
- Regulatory certainty through achievable targets;
- Increased compliance flexibilities;
- Adequate investments in HD ZEV and NZEV infrastructure to support requirements;
- Purchase incentives; and,
- Require upstream emissions accounting.

MEMA Supports Some Performance-Based Standards in the ACT

MEMA supports regulations and standards that are performance-based, technology-neutral and allow multiple technology paths for compliance, encouraging competition among available cost-effective technology solutions. While technology mandates can often provide certainty to specific markets, mandates can also stymie technology innovation and act as barriers to investment. As a result, mandates can destabilize investments and the competitive markets of cost-efficient technology solutions that can also meet California's air quality goals.

However, MEMA understands that California has determined it needs the ACT regulation – a technology-forcing, regulatory-driven approach to meet its State Implementation Plan (SIP) and the goal of achieving carbon neutrality by 2045 by providing signals as to which direction the state is headed. Nevertheless, MEMA members stand ready to help California meet these goals of minimizing the footprint of HD mobile sources.

As a result, MEMA recommends that the ACT program include some performance-based metrics. It is important that as the market for battery electric trucks and fuel cell electric trucks continues to grow, the technologies also continue to improve, innovate and provide cost-effective emission reduction solutions. It is important that performance standards are set to ensure continued progress and continuing cost-effectiveness in these technologies. MEMA supports California providing performance standards and goals for HD electric vehicles that encourage continuously improving battery performance, emissions over the full lifecycle, range requirements and deterioration limitations. Setting performance standards will provide protections and incentives for consumers and customers that invest in the technology.

MEMA Supports Regulatory Certainty through Realistic Targets

While ACT targets are helpful to encourage the HD ZEV market and technology deployment, the proposed targets in ACT are extremely aggressive. The proposed targets are even more aggressive considering compliance pathways are limited to battery electric vehicles (BEV) and fuel cell vehicles (FCEV) with partial compliance credits for plug-in hybrid electric vehicles (PHEV). Additionally, these targets were recently revised upward in CARB's May 2020 proposal from 15 to 55 percent for Class 2b-3 through 2035, from 50

to 75 percent for Classes 4-8 straight trucks through 2035, and from 15 to 40 percent for Classes 7-8 tractors through 2035. Further, the requirements jumped from 3 percent to 5 percent in 2024 when the industry will be ramping up for these HD requirements the first year of the program.³

While MEMA generally supports extending these sales requirements beyond 2030 to demonstrate continuity of these requirements, MEMA strongly recommends setting more realistic targets. Achievable targets are particularly important for model years (MYs) 2024–2030 when the HD industry is going through its learning curve with perfecting and correcting these important HD technologies. MEMA recommends, at a minimum, CARB maintain the original sales percentage requirements for MYs 2024-2030, rather than revising them upward per the revision proposed May 1, 2020.⁴

The light-duty (LD) ZEV requirements have seen multiple corrections because of the technology readiness and market demand. With the ACT expanding the requirements into commercial vehicles, the commercial vehicle market could be even more challenging to electrify as HD ZEV technology development is still behind LD ZEV. If HD ZEV penetration is forced too quickly there may be too many vehicles with unsteady technologies entering the market. This could result in more downtime and increased costs for repairs and maintenance. Yet, the ACT targets are even more aggressive than the LD ZEV requirements. As an example, despite the CARB LD ZEV program running for 30 years, LD ZEV sales has only just increased to 13.2 percent of the new 2019 car sales.⁵ Compare that with a HD ZEV target of 13 percent of Class 4-8 straight trucks within the first 2 years of the ACT program (in 2026).

Consequently, the current proposed ACT targets will most likely need future adjustments and downward revised targets. Motor vehicle suppliers need stable targets for the purpose of critical long-term investment planning cycles. Suppliers take the leading role in extensive research and development working toward bringing these innovative technologies to fruition for our OEM partners to meet regulatory targets. Suppliers do not get paid until the technology is deployed on a vehicle. Consequently, suppliers take on substantial risks associated with the roll-out of these technologies as it requires several steps, major economic resources and significant lead-time. Importantly, supplier return on investment must be amortized over several years and in a pre-determined timeframe. Revising these targets downward after the targets are set will disrupt demand and will put carefully planned technology investments made several years in advance at risks by delaying or cancelling product deployment. Cancelled or delayed product deployment would result in significant supplier stranded capital and investments. Further, the aftermath of COVID-19 pandemic will greatly limit supplier liquidity, demanding even more supplier scrutiny over investments in technology development. Providing certainty in the markets by having stable targets is of the utmost importance to suppliers. MEMA supports more realistic, achievable targets to provide motor vehicle suppliers with greater regulatory certainty for R&D investment in these technologies. MEMA recommends CARB

³ For Class 7-8 tractors and Class 2b-3 trucks in MY 2024.

⁴ <https://ww3.arb.ca.gov/regact/2019/act2019/30dayatta.pdf>

⁵ California Auto Outlook, Vol. 16 No. 1, CNDCA, February 2020.

maintain the original sales percentage targets for MYs 2024-2030, rather than revising them upward.⁶

MEMA Supports Increased Flexibility

MEMA recognizes that there will be significant market and technology transition challenges for the ACT success including improved natural resource availability for battery manufacturing, significantly increased infrastructure investment and increased customer acceptance. Consequently, MEMA strongly recommends the ACT include additional compliance pathways toward the same objective of net zero tailpipe emissions. CARB should remain open to additional technology options in its goal of a net zero-emission vehicle future. The inclusion of additional compliance pathways will strengthen CARB's proposal and advance complementary technologies that can also help meet the state's air quality goals.

MEMA recommends that California support HD ZEV market development by offering sufficient flexibility to the proposed credit system to sell more HD ZEVs in one weight category and fewer in another. This flexibility or credit system would allow more diverse OEMs to participate in this market in a meaningful way. Not all OEMs will choose to invest in all weight classes at the same time – especially given the current negative market environment which may continue for a few years.

MEMA supports the NZEV credit and appreciates CARB's proposal to extend the NZEV credit for an additional five years from 2030 to 2035 for NZEVs that achieve more than 75 miles of all-electric range. The NZEV credit will be critical in MYs 2024-2027, when industry will be ramping up to meet these requirements for the first time ever in the HD market.

MEMA urges CARB to expand the compliance pathway to include conventional HD hybrids (HEV) providing partial credits for conventional HEVs similar to PHEVs. The HD HEV technologies can serve as a successful transition to HD ZEVs by appealing to a broader market. HD HEVs are appealing to customers who are sensitive to cost and require a high driving range or a high payload. HD hybrid performance in electric mile driving range, motor efficiency and thermal management have significantly improved, providing direct environmental benefits.

Further, the ACT proposal sets a limit for NZEV credits to satisfy compliance at a maximum of 50 percent of the annual summed deficits.⁷ MEMA encourages CARB to consider revising this maximum allowance upward to as much as 70 percent from MYs 2024–2030. The maximum NZEV credits satisfying compliance can then be tapered off in MYs 2031–2034 to hit 50 percent in MY 2035. Recognizing HD HEVs and allowing more NZEV credits as a compliance percentage will strengthen CARB's proposal by including broader compliance pathways while advancing complementary technologies that can aid in meeting California's air quality goals.

⁶ <https://ww3.arb.ca.gov/regact/2019/act2019/30dayatta.pdf>

⁷ § 1963.3(d) of the ACT proposal

MEMA Supports Regulatory Certainty through Needed Investments in Infrastructure

Greater investment in fueling infrastructure is critical to provide clear and stable regulatory environment for ZEV technologies to guide and incentivize greater use of HD ZEVs. The ZEV market should be nurtured by California and other states by incentivizing and ensuring adequate battery charging and hydrogen refueling station infrastructure becomes a reality and is designed with HD trucks in mind. In order to ensure that all ZEV technology pathways and use cases are supported in California, hydrogen mobility infrastructure should be encouraged as much as battery charging infrastructure.

MEMA Supports Requiring Upstream Emissions Accounting

MEMA urges CARB to require upstream emission accounting for the GHG and criteria pollutant emissions associated with upstream electricity generation. MEMA supports at a minimum, a well-to-wheel fuel lifecycle analysis but a full vehicle lifecycle analysis should be considered by CARB to evaluate the benefits of vehicle technologies. There should be a comprehensive assessment on the fuel and energy impacts and its comprehensive costs. Without upstream emission accounting for the ACT requirements, it poses a problem for the Averaging, Banking and Trading (ABT) program for the HD Low NOx Omnibus rulemaking.

MEMA Supports Purchase Incentives

The COVID-19 pandemic has rapidly increased the investment gap necessary to finance the transition to a climate-neutral economy by 2045. Fleets and governments will likely not have enough revenue to buy HD ZEVs quickly. To create a market environment to advance these new (and often costly) HD ZEV technologies, California should provide market incentives from state public procurement programs to support the development of this market, as well as vehicle purchase premiums. Otherwise these fleets could possibly register more of their HD vehicles outside California. As a result, the ACT requirements may be achieved but HD vehicles operating within California will be higher emissions vehicles. Consequently, MEMA supports CARB providing purchase incentives for HD ZEVs and NZEVs and purchase incentives to buy HD hybrids to help with the transition.

MEMA Supports Continued and Increased Investing in HD ZEVs and NZEVs

In most cases motor vehicle suppliers lead technology development and take on substantial risks by driving a wide array of technology advancements needed to improve HD emissions. The ACT will require a large HD technology shift that will require significant investments from across the industry. Motor vehicle suppliers have already invested billions of dollars to develop and advance technologies that support California's environmental and air pollution reduction goals. As an example, suppliers have been ramping up R&D investment for the last several years to meet the standards expected to be set in CARB's HD NOx Omnibus rulemaking. CARB's regulatory process has allowed suppliers to provide innovative new emissions reducing technologies to support the ongoing HD NOx demonstration program years before our OEM partners have called for these capabilities.

Increased HD emissions reduction technology sales associated with the CARB's HD NOx Omnibus stringent requirements are imperative for suppliers' return on investments and continued growth. These revenues (with significant investments in industrial, workforce capital and R&D), serve as the underpinning to investments in cost-effective HD electrified powertrain solutions. Consequently, stringent standards in the HD NOx Omnibus rulemaking is essential for motor vehicle suppliers continued and strengthened strategic R&D investments to commercialize cost-effective HD electrification solutions needed for the HD ACT targets.

Conclusion

Suppliers play a significant role in the innovation and development of many of the technologies that could be used to meet the ACT program targets and California's overall 2045 carbon neutrality goal. While MEMA agrees there needs to be a push to incentivize the HD ZEV and NZEV market, MEMA strongly recommends the ACT regulation provides motor vehicle suppliers increased regulatory certainty through adding performance-based metrics, achievable targets, infrastructure development, increased flexibilities for compliance, and purchase incentives. MEMA appreciates CARB's consideration of these comments. For any questions, please contact Laurie Holmes, senior director, environmental policy at lholfmes@mema.org.

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