

**STATE OF CALIFORNIA  
AIR RESOURCES BOARD**

<b>Proposed Advanced Clean Fleets</b>	<b>)</b>	<b>Hearing Date:</b>
<b>Regulation; Initial Statement of Reasons</b>	<b>)</b>	<b>October 27, 2022</b>

**COMMENTS OF THE  
TRUCK AND ENGINE MANUFACTURERS ASSOCIATION**

October 17, 2022

Timothy A. Blubaugh  
Truck & Engine Manufacturers Association  
333 West Wacker Drive, Suite 810  
Chicago, IL 60606

**STATE OF CALIFORNIA  
AIR RESOURCES BOARD**

<b>Proposed Advanced Clean Fleets</b>	)	<b>Hearing Date:</b>
<b>Regulation; Initial Statement of Reasons</b>	)	<b>October 27, 2022</b>

**Introduction**

The Truck and Engine Manufacturers Association (EMA) hereby submits comments on the proposed Advanced Clean Fleets (ACF) regulation that the California Air Resources Board (CARB) released, along with CARB Staff's Initial Statement of Reasons (ISOR), on August 30, 2022. Included was a proposed regulation to terminate CARB's Advanced Clean Trucks (ACT) rule at the end of 2039 and replace it with a requirement that manufacturers sell only zero-emission vehicles (ZEVs) in California beginning in 2040.

EMA is a trade association that, among other things, represents the interests of the world's leading manufacturers of medium- and heavy-duty vehicles, internal combustion engines, and zero-emission powertrains. EMA and its members have worked constructively and successfully with policymakers over several decades to consequentially reduce the pollutant and greenhouse gas emissions from engines and traditional commercial motor vehicles. Looking forward, we recognize that ZEVs are the future of the trucking industry, and therefore EMA member companies and their suppliers are investing tens of billions of dollars to develop and bring to market medium- and heavy-duty ZEVs that will meet the commercial vehicle industry's needs.

EMA member companies are subject to the existing ACT regulation and would be subject to the proposed 2040 100 percent ZEV sales requirement, and they correspondingly have a strong interest in the ZEV purchase requirements in the proposed ACF rule that will support both sales mandates. Accordingly, EMA and its members have a direct and significant stake in the subject rulemaking.

**The Proposed ACF Regulation  
Fails to Provide Sufficient Leadtime**

Following the subject hearing on October 27, 2022, CARB is planning to approve the proposed ACF regulation during a second hearing in 2023. The final rule will become fully adopted when California's Office of Administrative Law issues a Final Regulation Order after that. Thus, the proposed ACF regulation, which is scheduled to take effect in 2024, will provide practically no leadtime for its implementation.

In order to implement the proposed ACF regulation, which would establish new emission standards for motor vehicles, CARB must seek and obtain from the U.S. Environmental Protection Agency (EPA) a waiver of federal preemption under the Clean Air Act. See, 42 U.S.C. § 7543(b). One of the necessary prerequisites to EPA's granting a preemption waiver is that the California standards at issue must be consistent with Clean Air Act section 202(a). See, 42 U.S.C. § 7521(a).

That section, among other things, requires a minimum of four full model years of leadtime before new heavy-duty vehicle emission standards can take effect. Accordingly, since the proposed ACF regulation does not satisfy that necessary leadtime prerequisite under the Clean Air Act, it would be invalid under federal law.

**The Proposed 100 Percent ZEV  
Sales Mandate is Not Supported by Data**

CARB’s ACT rule was fully adopted on March 15, 2021. The rule requires manufacturers of vehicles with a gross vehicle weight rating (GVWR) greater than 8,500 pounds produce and sell into California an increasing percentage of ZEVs, based on the manufacturers’ overall sales of medium- and heavy-duty vehicles in California. The mandated ZEV sales percentages increase through model year (MY) 2035, as follows:

Model Year	Class 2b-3 Group	Class 4-8 Group	Class 7-8 Tractors Group
2024	5%	9%	5%
2025	7%	11%	7%
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035 and beyond	55%	75%	40%

The proposed regulatory text for the 2040 100 percent sales mandate would sunset the ACT regulation at the end of MY 2039 and replace it with a requirement that manufacturers of vehicles with a GVWR greater than 8,500 pounds sell only ZEVs in California beginning with MY 2040. The only proposed exception is that the proposed mandate would not apply to an “authorized emergency vehicle” as defined by California Vehicle Code section 165.

The only rationale provided for sunsetting the ACT rule and establishing the 100 percent ZEV sales mandate is to “send a clear signal regarding the end of [internal combustion engine] powered truck sales in California.” See, ISOR pg. 3. There is no assessment of the technical feasibility of converting all new truck sales to ZEVs by 2040, if it will be cost effective for trucking fleets to only purchase ZEVs beginning in 2040, or if the infrastructure needed to charge the ZEVs will be in place in time.

Medium- and heavy-duty trucks are produced and sold in a wide variety of shapes and sizes, from heavy-duty pickup trucks, parcel delivery vans, intracity pickup and delivery trucks, construction vehicles, refuse trucks, regional freight tractors, and long-haul tractor-semitrailer combination vehicles. The ISOR does not explain why only emergency vehicles, and not any other configurations, must be afforded an exemption. It also does not assess the potential unintended

negative consequence of trucking fleets maintaining their existing vehicles longer if ZEVs cannot meet the needs of their specific operation.

### **The ACF Rule Must Align ZEV Purchases with the ZEV Sales Requirements in the ACT Rule**

Under the ACT rule, a manufacturer may only earn credit by selling a new on-road ZEV for use in California. However, under the proposed ACF High Priority and Federal Fleet requirements, “California fleet” is defined as the total number of vehicles operated in California during a calendar year, with no requirements for purchase or registration in California. These vehicles may be purchased by customers outside California, where they do not generate ZEV credit for a manufacturer’s ACT obligations, but do generate ZEV credit for a fleet’s ACF obligations. In fact, a ZEV sold outside California need not comply with the Zero Emission Powertrain (ZEP) Certification requirements in the ACT regulation, thus fleets may be motivated to avoid the costs associated with ZEP Certification by purchasing elsewhere. It is possible, or even likely, that a major fleet operating across the U.S. could meet their obligations under the ACF without generating a single ACT ZEV credit by purchasing and registering their vehicles out of state. To resolve that misalignment, CARB should modify the proposed ACF regulation so that a ZEV purchased under the ACF rule must also be eligible to generate credit under the ACT regulation.

### **The ACF Rule ZEV Categories Must Better Align with the ACT Rule**

Unlike the ACT rule, the proposed ACF regulation does not utilize vehicle weight class to designate fleet ZEV obligations. In the proposed ACF High Priority and Federal Fleet requirements, fleets utilizing the Milestone Path are likely to meet their ZEV target by operating less expensive ZEVs, while continuing to use traditional trucks and tractors for the heaviest applications, as the regulation allows fungibility between Groups 1 through 3 for credit generation. Similarly, for 2024 – 2026, the State and Local Government Fleets requirements in non-designated low population counties are likely to meet their 50 percent ZEV addition requirements with less costly ZEVs.

In contrast, manufacturers are not provide similar flexible class fungibility within the ACT rule, requiring them to sell Class 7-8 ZEV tractors whether or not the ACF has generated demand. If fleets favor adoption of less costly ZEVs over more expensive trucks and tractors, heavy-duty manufacturers could face significant difficulties meeting ACT obligations, delaying turnover of the California fleet.

To ensure the supply-demand relationship remains balanced and to create a ZEV market for all vehicle classes, CARB should:

- Harmonize the ACF vehicle categories with the weight classes adopted in ACT.
- Apply the same weight class modifiers in the ACT to ZEV additions for ACF credits.
- Not allow fungibility between vehicle categories in ACF, in alignment with ACT.

Those proposed modifications to the ACF regulations would ensure market development

across all vehicle classes and support the transition of California's medium- and heavy-duty market to ZEVs.

### **ACT Rule Exemptions Must Align with the ACF Rule**

The proposed ACF regulation would exempt from the ZEV purchase requirements many different categories of medium- and heavy-duty vehicles including school buses, military tactical vehicles, emergency vehicles, historical vehicles, and dedicated snow removal vehicles. However, the ACT rule provides no exemptions from its ZEV sales mandates, and the proposed 2040 100 percent sales mandate only exempts authorized emergency vehicles. The ACT rule imposes on manufacturers a rigid sales requirement with essentially no exemptions, while the proposed ACF rule would include numerous exemptions and alternative compliance paths. It is fundamentally inconsistent to exempt certain vehicles from a purchase mandate, while not exempting those same vehicles from the sales mandates. To correct that inconsistency and better align the two rules, if a fleet is awarded an exemption from the ACF purchase requirements, CARB must award the manufacturer of the traditional vehicle sold to the fleet instead of a ZEV an equivalent amount of relief from the ZEV sales mandate in the ACT regulation.

### **ACT Rule NZEV Credits Must Align with the ACF Rule**

The proposed ACF regulation would treat a near-zero-emission vehicle (NZEV) the same as a ZEV through 2035. Accordingly, a fleet could purchase an unlimited number of NZEVs and get the same credit under the ACF rule as purchasing ZEVs. The ACT rule also includes NZEV provisions, but the credits are severely restricted and discounted. Under the ACT rule, a manufacturer's NZEV credits are discounted based on the all-electric range of the vehicle, with the NZEV credit equal to no more than three quarters of a ZEV credit. Additionally, the ACT rule includes many restrictions on the manufacturer's use of those discounted NZEV credits, further diminishing their value. To align the NZEV credits between the ACT and ACF rules, CARB must modify the ACT rule to provide manufacturers a full ZEV credit for the sale of an NZEV, through at least 2035.

### **The ACF Rule Must Include a Manufacturer Test Fleet Exemption**

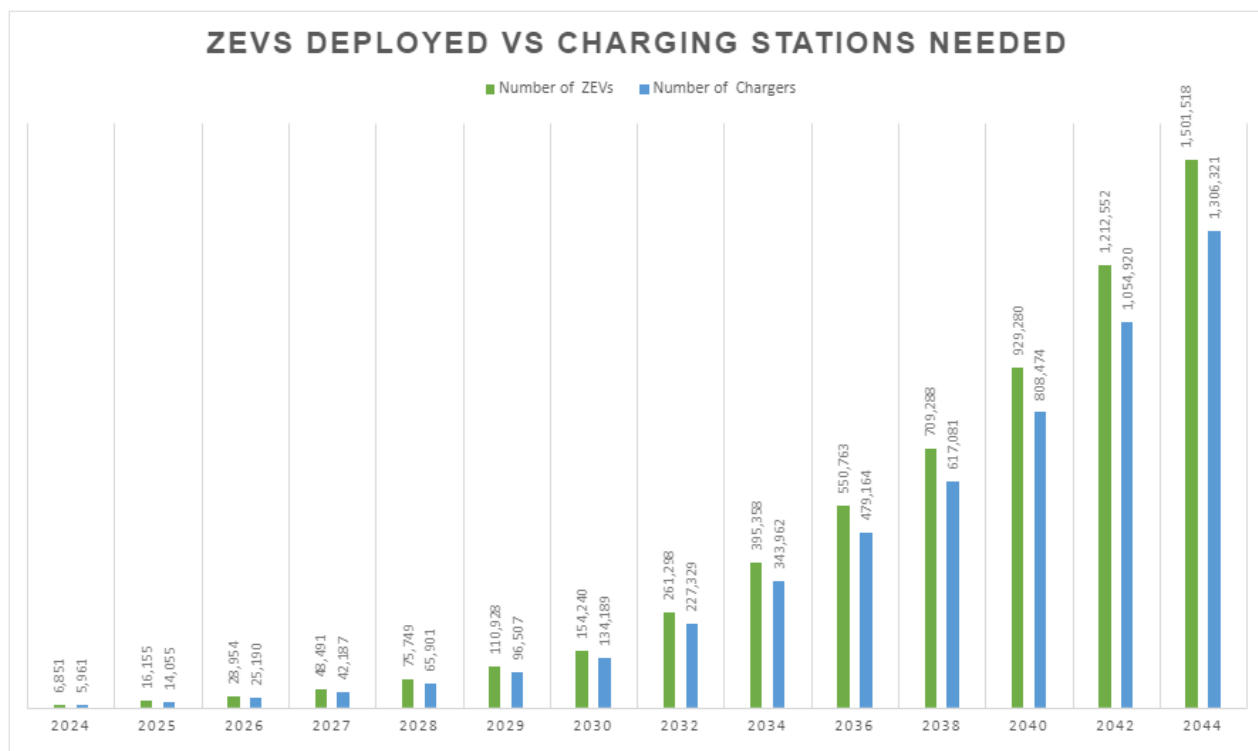
Manufacturers routinely operate fleets of test vehicles to validate performance in real-world operating conditions. The testing is necessary for the manufacturer to bring to market new technologies with the highest degree of confidence possible. The vehicles typically carry concrete ballasts to simulate freight loads and are driven by the manufacturer's test department employees. The vehicles are not sold and do not operate as a trucking fleet because they do not deliver goods or provide services; the vehicles are operated by the manufacturer for the sole purpose of accumulating miles in real-world operation. Nevertheless, to test on California roads, the manufacturer must register the vehicles with the California Department of Motor Vehicles. The validation needs of the manufacturer dictate the makeup of the fleet and therefore the proposed fleet composition requirements in the ACF rule would frustrate the goals of the testing. For those

reasons, the ACF final rule must include an exemption from the proposed High Priority Fleet requirements for manufacturer-run test fleets.

### **Data is Needed to Track Expansion of the Charging Infrastructure**

The cumulative number of ZEVs to be deployed by the ACT rule can be determined by multiplying the ACT sales percentages by the estimated number of annual medium- and heavy-duty sales in CARB's *ACT Staff Report: Initial Statement of Reasons*, pg. IX-9 (October 22, 2019). The ACF rulemaking is projected to increase the number of ZEVs over the ACT volumes by approximately 60 percent. (See, ACF ISOR, pg. 1.) The California Energy Commission's (CEC's) *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment* (July 2021) estimates the number of chargers needed to support each medium- and heavy-duty ZEV. The CEC report concludes that in 2030 one charging station could support 1.15 ZEVs.

The following graph shows the cumulative volume of ZEVs that the combined ACT and ACF rules predict deploying, along with the number of charging stations needed each year to power the ZEVs:

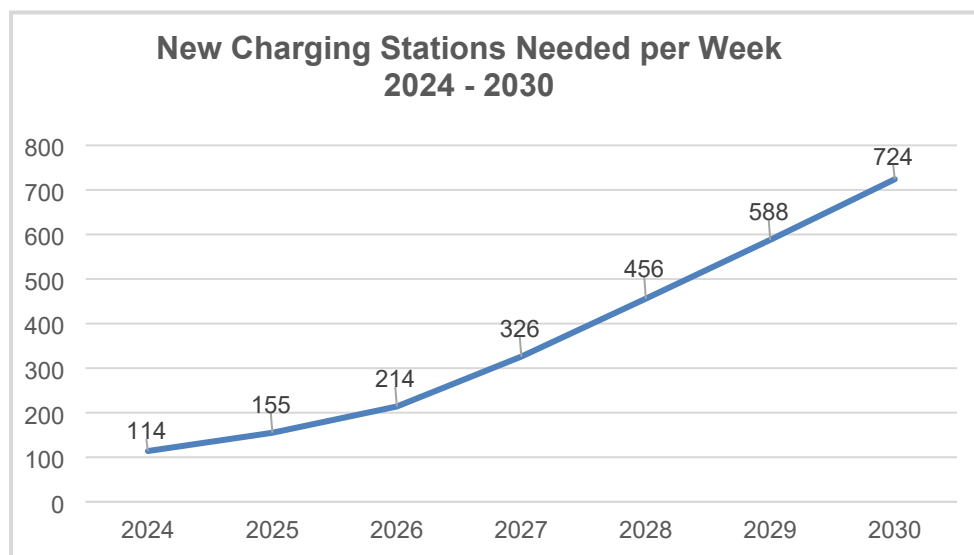


Immediate and rapid construction of charging stations is needed to support the medium- and heavy-duty ZEVs to be deployed by the ACT and ACF rules. For example, 134,189 charging stations must be operational by 2030 to support the 154,240 ZEVs anticipated by the ACT and ACF rules. See the following summary of the charging stations needed:

Cumulative Charging Stations Needed							
Year	2024	2025	2026	2027	2028	2029	2030
<b>MHD ZEVs</b>	6,851	16,155	28,954	48,491	75,749	110,928	154,240
<b>Chargers Needed</b>	5,961	14,055	25,190	42,187	65,901	96,507	134,189

It can take 24 to 48 months to construct a charging station, including planning, design, securing easements, obtaining permits, construction, electricity grid upgrades, energization, and training. Accordingly, the 5,961 charges needed by 2024 should be under construction now. Additionally, those charging stations must be installed at the trucking terminals, depots, and warehouses where commercial trucks are typically parked. Since medium- and heavy-duty trucks include Classes 2b through 8 (8,501 – 33,000+ pounds GVWR), the chargers needed for those diverse ZEVs will range in power output from 20 kW – 1+ MW.

An average of 360 chargers must come online each week between now and 2030 to adequately support the 154,240 ZEVs to be required by CARB’s ACT and ACF rules. To meet the needs of the medium- and heavy-duty ZEVs deployed after 2030, the pace of charger construction must accelerate. Reference the summary graph below:



Governor Newsom’s Executive Order N-79-20 calls for transitioning the state’s entire 2,000,000+ fleet of medium- and heavy-duty trucks to ZEVs by 2045 (where feasible). To achieve that goal, the state would need to significantly accelerate the pace of medium- and heavy-duty ZEV sales, fleet purchases, and charging infrastructure development.

CARB fully contemplated the importance of a robust charging infrastructure to the success of its medium- and heavy-duty ZEV deployment ambitions during the two hearings on the proposed ACT rule. At the conclusion of those hearings, during which individual Board Members stressed

the importance of developing the charging infrastructure, CARB issued a resolution that included the following:

BE IT FURTHER RESOLVED that CARB recognizes the importance of identifying and committing additional resources to addressing the need for infrastructure and supporting actions to make a full transition to a zero-emission transportation system. For that reason, CARB is committed to working with our sister state agencies, including the California Energy Commission, the California Public Utilities Commission, and the Governor's Office of Business Development as well as utilities, local permitting agencies, and fleets to expand infrastructure for the transition to zero-emission medium- and heavy-duty technologies.

Resolution 20-19, pg. 10 (June 25, 2020)

We urge CARB and CEC to track the development of California's capacity to power and support the medium- and heavy-duty ZEVs that are projected to be deployed by CARB's ACT and ACF rules. Those California agencies, and perhaps others, should develop and make publicly available real-time data showing whether charging infrastructure construction is on pace to meet the needs of the projected medium- and heavy-duty ZEV deployments.

The data should be used to plan for increasing the capacity and resiliency of California's electricity grid to adequately power the charging stations needed to support the anticipated deployments of medium- and heavy-duty ZEVs. There is no doubt that significant electricity grid upgrades will be needed in California to power ZEVs, both passenger cars and medium- and heavy-duty vehicles.

Trucking businesses are highly unlikely to invest capital in a stranded asset, and therefore suitable charging stations must be in place before the trucking fleets takes delivery of new ZEVs. If the tracking data indicates that the charging infrastructure will not be in place in time to power the ZEVs required by the ACT and ACF rules, CARB must modify the rules accordingly.

### **ZEV Credit Generation in the ACT Rule Remains an Unworkable Barrier to Implementation**

All vocational commercial trucks are built in multiple stages by different manufacturers. The ACT rule governs the first manufacturer, who builds an incomplete chassis-cab or stripped chassis. However, before the finished commercial truck is put in service, a highly specialize body must be installed by a subsequent manufacturer (typically referred to as the "bodybuilder" or "final-stage manufacturer"), and often additional modifications are made to the vehicle by yet another entity (or, vehicle "alterer"). The time it takes after the original manufacturer sells the incomplete vehicle until the completed vehicle can be put in service often takes several months, and in many cases it takes multiple years. Even commercial tractors, that are built complete by the original manufacturer, often take several months, and in some cases a year or more, to be placed in service. Ignoring that reality of commercial vehicle manufacturing, the ACT includes the following requirement:



ZEV Credit Calculation. A manufacturer may generate ZEV credits for each ZEV produced and delivered for sale in California for the manufacturer-designated model year. ZEV credits are earned when a new on-road vehicle is **sold to the ultimate purchaser in California**. The ZEV credit generated for each vehicle sold is equal to the value of the appropriate weight class modifier in Table A-2 of section 1963.1.

13 C.C.R. § 1963.2(a) (emphasis added)

Delaying the generation of credits and deficits until a vehicle reaches an “ultimate purchaser” in California creates an unworkable requirement for truck manufacturers. As noted, this is particularly the case for vocational commercial vehicles that are built in multiple stages by different manufacturers (many of which are small truck bodybuilders located around the country). In those cases, the completed vehicle may not be put into service until years after the chassis-cab was manufactured. As such, under the ACT regulation, the original truck manufacturer likely will experience a delay of months or even years after it sells an incomplete ZEV before it may generate any credit toward compliance with the ACT regulation. To resolve that unworkable situation, we renew our request that CARB clarify that manufacturers may generate credits and deficits under the ACT rule as follows:

1. The original manufacturer (*i.e.*, in many cases, the manufacturer of an incomplete chassis) should be able to generate a ZEV credit, or deficit, when it produces and delivers for sale a vehicle, or incomplete vehicle, that the manufacturer predicts will be first registered for use in California. (The original manufacturer would need to solicit information from dealers, customers, subsequent manufacturers, and ultimate purchasers to predict those completed vehicles that will be first registered for use in California.)
2. If the original manufacturer becomes aware that a completed vehicle ultimately ends up being first registered for use in California when the manufacturer predicted otherwise, or vice versa, the manufacturer would be obligated to correct its ACT report for that model year. In that case, the original manufacturer would update its model year report when submitting a subsequent model year report. (The original manufacturer would need to ascertain where the completed vehicle ultimately ends up being first registered for use based on warranty registration and/or vehicle registration data. Additionally, to avoid being subject to penalty, the manufacturer would need to maintain a sufficient bank of ZEV credits to remain in compliance.)

CARB should provide the above practical guidance to manufacturers, in recognition of the crucial role of subsequent entities in the manufacturing of commercial vehicles. Importantly, the recommended guidance would provide a workable method whereby the original manufacturer of a commercial vehicle could realistically generate a credit or deficit under the ACT regulation.

### **Conclusion**

The manufacturer sales mandates in the ACT rule will be effective in 2024. However, before that even happens, CARB is attempting to increase the ZEV sales requirements with the

2040 100 percent sales mandate. Before doubling down on the sales mandates, CARB should instead focus on crafting an effective ACF rule that will require purchases of commercial ZEVs in alignment with the sales mandates in the ACT rule. Additionally, the agency should develop the data needed to track development of the infrastructure that must be in place to support the anticipated deployments of medium- and heavy-duty ZEVs. If the data shows that the infrastructure expansion will not be sufficient to support the anticipated ZEV sales volumes in the ACT rule, CARB must reduce the required sales percentages.

We look forward to continuing to work with CARB and other stakeholders to successfully transition California's commercial vehicle market to ZEVs. If there are any questions about these comments, or if we could provide any additional information, please do not hesitate to contact Tim Blubaugh at (312) 929-1972, or [tblubaugh@emamail.org](mailto:tblubaugh@emamail.org).

Respectfully submitted,

TRUCK AND ENGINE  
MANUFACTURERS ASSOCIATION

129559.5