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Craig Duehring, Manager
California Air Resources Board
Mobile Source Control Division
1001 I Street
Sacramento, CA 95814
Submitted electronically at *www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=acf-comments-ws*

Re: Advanced Clean Fleets workshop and draft regulatory language

Dear Mr. Duehring,

CALSTART appreciates the opportunity to comment on the Advanced Clean Fleets (ACF) draft regulatory language and supports CARB's efforts in developing this policy. Our comments focus on the regulatory timeline, fleet adoption targets, scope of fleets covered by the policy, the need for zero-emission fleet policies covering light-duty vehicles, and the importance of infrastructure planning to the success of this policy. Fleet purchase requirements are an important complement to the Advanced Clean Trucks (ACT) standard, which created zero-emission sales requirements for medium- and heavy-duty manufacturers. Fleet rules will provide clear signals to vehicle buyers and guarantees to manufacturers that the market for zero-emission trucks will materialize. These regulations are likeliest to succeed if accompanied by other key policies, such as sustained and robust vehicle purchase incentives and commitments by other state agencies to accelerate supportive infrastructure policy, including funding for infrastructure deployment.

Our comments are informed by the deep knowledge of not only our staff, but also our 300+ member companies, which include leading global fleets and smaller public and private fleets that are highly invested in a clean vehicle future. Our membership also includes market-leading companies that are developing the zero-emission vehicles and infrastructure to serve fleets. In the past few months, CALSTART held a series of roundtable discussions in partnership with Ceres on the ACF, with more than twenty large fleets in attendance. We organized these roundtables to provide a platform for major fleets in California to learn about the ACF, ask questions, consider the impact of the policy on their businesses, and provide feedback. This allowed CALSTART to gather insight into how the ACF will impact the industry and other important considerations for electrifying this sector. We have integrated points from the participants in these roundtables into our comments below. We believe that the ideal structure for a regulatory regime for MHD ZEVs would be the co-creation of fleet requirements with the regulation of vehicle sales, and therefore emphasize that the expeditious adoption of fleet requirements to support the ACT should be CARB's primary goal.

In this comment letter, we make the following recommendations: (1) advance the regulatory process and adopt the rule as soon as possible; (2) accelerate the adoption timeline for under High Priority Fleets' "Group 2" vehicles (work trucks, day cabs, three-axle buses) to begin in 2025 rather than 2027; (3) close loopholes around ownership and control; (4) include compliance options that reduce vehicle miles traveled; (5) work with sister agencies to ensure the necessary infrastructure can be built-out on these timelines; and (6) include Class 2a trucks in the public fleet purchase requirements and in the work truck category for high priority fleets.

Regulatory Timeline

CALSTART is concerned that the planned timeline for approving the ACF, which was recently pushed back 6-12 months for a final approval in 2023, will not have the expected effect of supporting the ACT sales mandates in the critical, early years of implementation. Given the ACT was approved by the CARB Board in June 2020, we recommend an expeditious adoption of the ACF to support the ACT and provide further certainty in the zero-emission truck market. Timely board adoption of the ACF will allow fleets to plan the appropriate vehicle purchases. While CALSTART supports the proposed 100 percent zero-emission truck sales standard for 2040, it represents a distinct type of policy from the ACF requirements. If the development of this target is delaying the timeline for CARB to vote on the ACF, we would recommend that it be developed in a separate rulemaking.

Another important reason for CARB to move forward expeditiously with this rule is to provide certainty to partner state agencies regarding fleets' near-term need for zero-emission infrastructure (either battery charging or hydrogen fueling). Utilities will need years of lead time to plan for the distribution grid upgrades that will inevitably be needed by large fleets to meet their charging needs. Our comments discuss the infrastructure implications of the proposed regulation in more detail below.

Adoption Targets and Timelines

CALSTART's primary recommendation regarding adoption targets and timelines under the ACF is that this policy matches, if not exceeds, the number of zero-emission trucks deployed under the ACT and on timelines as close as possible to those in the ACT for the same classes of vehicles.

We are encouraged to see CARB's updated modeling that estimates the ACF will result in 9 percent of trucks on the road in California being zero-emission by 2030 and 55 percent by 2045.[1] These are larger than CARB's previous estimates of 6 percent and 33 percent, respectively.[2] Even these higher estimates, however, do not suggest compatibility with SB 32, requiring the state's global warming emissions in 2030 to be 40 percent below 1990 levels,[3] nor Executive Order B-55-18,[4] establishing a statewide goal of carbon neutrality by 2045. CARB's own modeling in the Mobile Source Strategy indicates that roughly 21 percent and 71 medium- and heavy-duty vehicles on the road (not sales) must be zero-emission to achieve the state's 2030 and 2045 climate targets, including 100 percent of medium- and heavy-duty vehicle sales being zero-emission in 2035.[5]

Based on the "beachhead" strategy,[6] CALSTART's advocacy across the U.S. and globally has focused on rapid electrification of urban vehicles that follow a "return-to-base," fixed-route model. The beachhead strategy is a phased, segmented approach that acts as a powerful framework for focusing regulation and incentives, as well as guiding manufacturers on where to focus their products. We see the beachhead strategy well reflected in many elements of the ACF proposal, and in others, we recommend ways that

[1] Slide 59 at https://ww2.arb.ca.gov/sites/default/files/2021-09/210909acfpres_ADA.pdf
[2] Slide 15 at https://ww2.arb.ca.gov/sites/default/files/2021-03/210302emissions_ADA.pdf
[3] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32
[4] https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf
[5] Table 11 and Figures 22 and 26 at https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf
[6] https://globaldrivetozero.org/publication/the-beachhead-model/

the proposal could further align by pushing early beachheads on a more ambitious timeline, while recognizing the current limitations for vehicle vocations that do not follow a return-to-base model.

In the ACT rulemaking process, CALSTART developed an internal analysis which suggested that the ACT sales targets could be achieved with rapid ramping of sales across eight different beachhead segments. These segments include: delivery vans, medium-duty delivery (box) trucks, school buses, cutaway/shuttle buses, refuse trucks, heavy-duty urban delivery, heavy-duty regional haul, and terminal trucks. Specifically, our analysis found that the ACT targets could be achieved with zero-emission vehicle sales between 20 and 40 percent for these vehicle applications in the early years of the ACT. Importantly, achieving these levels of sales rely upon continuing incentives for vehicles and infrastructure in the early years of the ACT.

Comments on High Priority Fleets Proposal

CALSTART believes that the medium- and heavy-duty zero-emission vehicle market is close to a tipping point, but it is only by reaching production scale that the price of these vehicles can begin to come down. We believe that incentives remain critical to bringing down initial vehicle purchase prices across most segments for at least the next 5-6 years if fleets are to dramatically change their purchasing patterns on a very short timeframe. The development of federal incentives could be game-changer for this industry and remove the pressure of states being the sole source for driving down the price of vehicles and proving their field-readiness. CALSTART is actively working towards a federal truck purchase incentive. The latest negotiations in Congress suggest significant federal funding for public and private fleets' zero-emission vehicle purchases will be realized.[7]

Based on our analysis of the truck market and our beachhead strategy, we recommend that CARB strengthen the requirements for Group 2 vehicles (work trucks, day cab tractors, and three-axle buses) in the High Priority fleet section of the ACF by matching the timeline with the Group 1 vehicles, i.e. begin requirements in 2025 and ramp to 100 percent targets in 2035. We encourage CARB to consider beginning these requirements at between 5 to 10 percent of fleets' vehicles. Vocations within all three of the Group 2 categories align with our beachhead strategy. If Class 2a pickup trucks are included in the ACF as discussed in greater detail below, we believe it is appropriate and possible to accelerate the zero-emission targets for work trucks operated by public and large private fleets given the compatibility of these vehicles' duty cycles with zero-emission technology. With respect to day cabs, many of these vehicles fall into our beachhead category of regional haul operation. As discussed below, infrastructure installations and upgrades could be the bottleneck in deploying zero-emission trucks in these applications and must be addressed with comprehensive interagency policy coordination.

Accelerating the targets for day cabs would put this class of vehicles on a more similar timeline to the drayage truck component of the ACF, but also provide a more guaranteed market for manufacturers required to sell Class 7/8 zero-emission tractors in the early years of the ACT. Because the ACF's drayage component does not set requirements for the purchase these vehicles, but rather prevents combustion tractors from being added to the state's drayage registry, we think this would be an important alignment. If drayage fleets delay purchasing new vehicles because of the zero-emission requirements, there could be limited market demand for zero-emission tractors without accelerating

[7] https://calstart.org/truck-makers-and-zero-emission-advocates-call-for-vehicle-tax-incentive-with-cash-payment-option-august-31-2021/

the day cab standards. Also, there are concerns that fleets with both drayage and non-drayage applications would swap vehicles between vocations if the timelines aren't aligned.
Finally, many three-axle buses, or "over the road coaches," operate on local and regional duty cycles as employee "commuter" shuttles. Multiple manufacturers have electric models available today and are in use by various fleets. Therefore, we see this as a more mature segment and observe that these duty cycles are also amendable to an earlier compliance timeline.

There are some special considerations regarding work trucks that we encourage CARB staff to consider. First, there is, at present, no incentive available for public and corporate operators of Class 2b-3 work trucks, as these trucks are not eligible for HVIP or CVRP.[8] Second, the LCFS regulation was not designed with electric work trucks in mind, because many work trucks will be parked at homes overnight, and not depot charged. Under the LCFS, home charging does not earn the truck's owner any LCFS credits, because the credits will be kept by the utility under the existing LCFS regulation. Therefore, we encourage CARB to consider a solution to this challenge, as LCFS credits play a major role in electric trucks' total cost of ownership. If fleets cannot sell LCFS credits for charging their work trucks, they may be discouraged from electrifying and/or adoption may be much slower than is envisioned under the ACT and what is needed to reduce our state's GHG emissions. Beyond concerns about the timeline, multiple participants raised the importance of distinguishing between railyard and seaport drayage.

<u>Scope of Regulated "High Priority" Fleets – Ownership, Contracting, and Load Boards</u>

One of CALSTART's main concerns about the ACF is the fairness of this policy for fleets, and not allowing progressive and committed fleets to be undercut based on their competitors' business practices that would exempt them from transitioning to zero-emission trucks. The success of this policy depends on all fleets being subject to the same standards as their competitors and not creating loopholes that allow the industry to shift business practices and avoid adoption of zero-emission trucks. CARB's definition of "common ownership or control" will theoretically appropriately hold entities accountable to requirements under the ACF whether they own, dispatch, or manage vehicles on a day-to-day basis. The definition also rightly includes vehicles displaying an entity's name or logo or using an entity's state or federal operating authority, registration, or motor carrier number.[9] However, CALSTART is concerned that brokers who truly "control" the trucks that they are dispatching and should be regulated will simply say that they hire their contractors on an ad hoc basis. We recommend that CARB further articulate the meaning of "control," because the current regulatory language could be interpreted to exempt all fleets who use independent owner operators.

Furthermore, in the draft regulatory language, CARB introduces the idea of a broad exemption for freight moved via a "load board," clarifying that such activities would not fall within this definition of "ownership or control" and therefore are outside the scope of this rule. CALSTART is deeply concerned about the breadth and the unintended consequences of this exemption. We encourage CARB to think creatively, and work with stakeholders, to find a way for CARB to verify companies who truly use load boards on an infrequent, ad hoc basis versus those who have what amount to dedicated contactors.

[8] Individuals purchasing Class 2b-3 zero-emission vehicles are eligible for the federal tax credit up to $7,500, see https://www.law.cornell.edu/uscode/text/26/30D
[9] https://ww2.arb.ca.gov/sites/default/files/2021-08/210909acfdraft_highpriofed_ADA.pdf

CARB's exemption of load boards and brokers dispatching loads on ad-hoc bases,[10] appears to create a compliance loophole that could dramatically shift freight to these gig-type services and not achieve the deployment of zero-emission trucks envisioned by the ACF. This concern was expressed by many fleets in CALSTART's roundtable discussions on the ACF. One participant stated, "If you give an exemption to a carrier, the freight will go to them, as freight will go where the cost is the cheapest." We recommend that CARB explore policy mechanisms for closing this loophole, which could include audits of fleets' uses of load-boards to determine if one fleet is in fact using short-term contracts in such a way that a longer-term relationship is implied, or, if a fleet suddenly shifts significant volumes of freight away from its current practices and towards the use of load boards.

CALSTART has suggested that CARB could possibly verify the formal/informal nature of these contracting relationships by using information from 1099 tax forms to determine which fleets are dispatching vehicles on a frequent basis, which would result in a large payment from one broker at the end of the year. While the truck fleets moving freight via load boards may be small, the companies operating the load board (or ad hoc brokerage service) are large, highly profitable corporations. Therefore, we can envision a creative regulatory solution that somehow includes these large businesses in the regulation by requiring that a certain percent of freight they move use zero-emission miles. Alternatively, brokers could report their largest users every year, and the following year those users would be required to utilize zero-emission fleets at equivalent percentages as if they were regulated under other elements of the rule. We encourage CARB to explore ways to create an even playing field by working directly with fleets to develop ideas for how the freight moved by load boards could be included in the regulation – perhaps by holding a stand-alone workshop on this topic. Finally, CARB could clarify the definition of "common ownership or control" and close the loophole currently open to load boards by removing the "day-to-day" language.

Creative Ideas for Reducing Vehicle Miles Traveled

As has been widely covered in the media, the number of packages delivered in the U.S. has skyrocketed during the pandemic. More and more delivery vehicles are on California's streets. Making the transition to zero-emission vehicles will reduce GHG and criteria emissions, but will not ameliorate congestion or other traffic-related concerns in California. CARB has an opportunity in the ACF to advance leading ideas regarding how to move more packages using innovative mobility options, such as e-delivery cargo bikes. The ability to deliver packages efficiently via e-bike is being piloted by companies like FedEx in large urban areas such as Toronto and New York City.[11] Cities like San Francisco and Los Angeles could benefit greatly from the substitution of e-bikes for delivery vans, which can have co-benefits such as: compatibility with pedestrianization programs, with cities' "Vision Zero" goals, and supporting development of robust biking infrastructure that can facilitate more active transportation outside of the delivery sector. Therefore, we encourage CARB to develop an optional compliance pathway to provide credits to fleets that swap out vehicles for non-vehicular modes, such as e-cargo bikes. CALSTART looks forward to working further with CARB on potential structures for such a mechanism that preserves the emission reductions estimated by the ACF while also reducing vehicle miles traveled.

[10] Slide 49 at https://ww2.arb.ca.gov/sites/default/files/2021-09/210909acfpres_ADA.pdf

[11] https://calstart.org/wp-content/uploads/2021/09/CALSTART-FedEx-Curb-Space-Mgmt-White-Paper-2021-3.pdf

Infrastructure Readiness

Beachhead vehicle segments follow a return-to-base model that is generally well suited to battery electric vehicles that can depot charge. CALSTART is currently advocating across the country with our members to ensure that electric utilities are enabled to provide the infrastructure that fleets need to electrify in these early mover segments. In most places, fleets are still focusing on adopting a handful of vehicles at a time. But the ACF will require a truly massive scale up in a short period of time. As we often explain to other regulatory bodies around the country, ZEVs cannot be driven if they cannot be charged or fueled. In our observation, the "standard" utility interconnection timeline of 18 months for a commercial EV charger only applies when distribution system upgrades (such as capacity or "line extension" upgrades, substation improvements, etc.) are not required. A need for increased electrical capacity at a fleet's depot could mean a timeline of 2-3 years.

At recent workshops on the ACF, when asked about whether the state's infrastructure system, specifically the state's investor-owned and municipal utilities are prepared to build out the charging capacity needed on the ACF timelines, or whether there is a plan to build needed hydrogen infrastructure, CARB staff defers to its sister agencies Go-Biz, CEC and CPUC. While CEC may have primary responsibility for long term energy reliability planning (through its IEPR proceeding and its HEVI-load modeling efforts) and responsibility over incentive programs for charging and fueling infrastructure for zero-emission vehicles, including the new EnergIIZE program, it does not have authority over utilities. The CPUC, which regulates investor-owned-utilities and must authorize their expenditures, has recently recognized the passage of the Advanced Clean Trucks rule in their Transportation Electrification Framework proceeding (TEF), but the proceeding does not have the ACF proposal in scope and has not discussed what the utilities will need to do to electrify fleets on the timelines envisioned by the ACF. Similarly, it is unclear whether the IEPR will reflect ACF projections for fleet electrification.

CPUC held an "en banc" on transportation electrification on October 13th but, unfortunately, did not include CARB staff or leadership in this meeting. CARB staff shared at a recent ACF workshop that joint agency meetings are being planned. Holding a joint workshop with the leaders of the three agencies will not only reassure the public that California is looking at ZEV rollouts holistically, but will provide fleets with much needed information about infrastructure build-out changes that will be necessary as CARB advances this rule. Because the ACF and associated charging/fueling infrastructure are so interrelated, a public workshop held jointly between the three agencies would be of great value. Utilities, both investor-owned and municipal, must be included in this workshop as well, so that all agencies can better understand the potential timelines required to service fleets' energy needs. With the fleet reporting collected by CARB last year, CARB should have a good idea of where fleet depots are located, and then should be able to create estimates of the number of vehicles required to be zero-emission at these locations under the timelines in the ACF. This information is critically necessary for the CPUC and municipal utilities to begin to understand, project, and plan for the potential grid impacts and grid upgrades that will be needed under the ACF. Our understanding is that utilities have not received fleet reporting data yet.

Furthermore, no state agency has meaningfully evaluated the hydrogen infrastructure needed to support MHDVs. This workshop should also focus on how the state will study the need for hydrogen fuel for longer mileage applications, and how the agencies' envision supporting the development of hydrogen fueling for MHDVs. To date, the CEC has primarily incentivized the development of hydrogen stations to service light-duty vehicles.

Many fleet participants in the ACF roundtables that CALSTART hosted with Ceres voiced the perspective that infrastructure is the biggest challenge to deployment of these vehicles, and their points underscore the necessity of our suggestions above. Concerns varied from issues with the infrastructure installation process, to cost and availability of chargers. For example, on the topic of installation, one participant called for public utilities to streamline the application and installation process for charging infrastructure. This supports the need to hold a multiagency public workshop and including the utilities. Furthermore, multiple participants in these workshops raised concerns that the utilities may not be ready to supply chargers with the required electrical capacity.

Infrastructure for Zero-Emission Drayage Trucks

Our ACF roundtable discussions included many expressing concerns infrastructure timelines and needs for zero-emission drayage trucks. Participating fleets highlighted past experiences with interconnections for depot charging, as well as their expectation that drayage electrification will rely heavily on shared charging at the ports (currently mostly non-existent), and also public truck charging. CALSTART observes that many drayage truck drivers currently park their vehicles at home at night, and therefore we recommend that CARB work with other agencies to discuss the specific charging needs of drayage trucks and create a shared, long-term plan for serving this segment's needs. While the state's 2021 budget included funding specifically for infrastructure to support zero-emission drayage trucks, the funding is only one piece of this complex puzzle.

Light-Duty Pick-Up Trucks

CALSTART previously submitted a letter to CARB, signed by other stakeholder organizations, requesting that CARB consider a light-duty zero-emission fleet regulation.[12] CARB has previously adopted fleet policies for transit fleets and airport shuttles, and the current ACF includes standards for publicly owned fleets, yet to date has no formal plans to regulate fleets of light-duty vehicles, even those operated by large corporations.

Given the significant cross-over of fleets that use Class 2b-3 pickup trucks (work trucks) and those fleets that own and drive a large number of Class 2a pickups, CALSTART requests that CARB consider the expansion of the ACF for public fleets and large "high priority fleets" to include Class 2a pickups. This would be a logical and effective expansion of the ACF's proposed scope because: (1) zero-emission Class 2a pickups have better total costs of ownership and higher GHG benefits because they are driven more;[13] (2) Class 2a and 2b vehicles are closely related: the zero-emission equivalent of a Class 2a combustion vehicle could be a Class 2b vehicle in the battery electric form due to weight, and (3) a fleet operating Class 2b combustion vehicles could potentially shift to Class 2a combustion vehicles to avoid being regulated.

Class 2a work trucks operated by small fleets wouldn't fall under this proposal given the current fleet size thresholds in the ACF, therefore, the expansion we propose would only apply to larger corporate fleets and public fleets. Local governments and public/municipal utilities own many Class 2a pickups,

[12] Letter submitted to CARB on July 21, 2021, signed by Sierra Club California, Coalition for Clean Air and CEERT. The Alliance for Automotive Innovation submitted a separate letter asking for light-duty fleet rules in July 2021. The American Lung Association introduced this concept in 2020 and Governor Brown sent a letter to CARB on the topic in 2018.

[13] Internal CALSTART analysis found that the average CA fleet drives approx. 30,000 miles a year in 2a pickups.

and many public fleets have ambitious plans to purchase electric Class 2a pickups as soon as they are available, so this regulatory expansion would mostly have the effect of bringing along those fleets with less ambitious commitments and growing the market. Such a regulatory expansion would also have the effect of supporting the targets CARB is presently developing under the "Advanced Clean Cars II" rulemaking.

Since far more Americans own a Class 2a pickup than a light-duty passenger car,[14] speeding the adoption of these vehicles in fleets can have incredible ripple effects across the national personal vehicle market. But this is another area where California must lead, and not including Class 2a pickups for large and public fleets in this rule would be a missed opportunity.

Conclusion

CARB has taken a necessary step towards widespread zero-emission vehicle deployment through its commitment to develop the Advanced Clean Fleets regulation. CALSTART thanks CARB for their receptiveness to feedback in ensuring the success of this regulation. We recommend moving forward quickly with adoption of the ACF to support the ACT and provide certainty to fleets and state agencies that will be involved in planning this transition. Certain elements should be tweaked or addressed before adoption, such as standards for "high priority fleets," definitions of ownership and control, and infrastructure readiness, and the inclusion of light-duty trucks. We also encourage CARB to think outside the box regarding reducing VMT, especially in the delivery sector, by developing a credit mechanism for companies that move some routes to e-bikes.

The issues inherent in this complex and wide-reaching rulemaking are some of the most challenging that CARB has had to grapple with, and yet, the importance of this rulemaking for the climate and air quality cannot be understated. CALSTART is committed to continuing to work with CARB staff and stakeholders to find solutions to some of the complex issues inherent in this rulemaking, and to strengthening the rule as much as possible, by building upon some of the suggestions made in these comments. Our sincerest thanks for your consideration of our comments and our offer of ongoing collaboration.

Sincerely,

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[14] In 2018, sales of light trucks accounted for about 72 percent of the approximately 17 million light vehicles sold in the United States.https://www.statista.com/statistics/199980/us-truck-sales-since-1951/