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Submitted electronically: https://ww2.arb.ca.gov/applications/public-comments

April 7, 2023

***RE:* Comments on Advanced Clean Fleets Regulation: High Priority and Federal Fleet Requirements.**

Dear CARB Staff,

On behalf of the Associated General Contractors (AGC) of California, we are submitting comments to the California Air Resources Board (CARB) in response to Advanced Clean Fleets Regulation, specifically regarding the High Priority and Federal Fleet requirements.

AGC of California is a member-driven organization that statewide consists of over 900 companies. Our members provide commercial construction services, many of which own or operate 50 or more vehicles in their fleets. We believe the construction industry is vital to the success of California. Together, our members actively create opportunities to build and strengthen our state. We are passionate about shaping policy, improving industry relationships, and developing our workforce.

AGC of California appreciates the opportunities that CARB has provided to submit comments, however, the construction industry is severely concerned that our comments have largely been disregarded. We assert that the construction industry is unique and does not fit this "one size fits all" approach that is currently being proposed due to the remote and temporary nature of construction sites.

In construction, the last step in permitting is typically to set up power if power is set up at all. To charge electric heavy-duty construction vehicles, DC chargers would be required. DC chargers do not exist in remote sites because hard wired, high voltage, high amperage electrical power is not available. Therefore, the only way these chargers would be functional was if they were powered by diesel generators which would be self-defeating.

As a solution to this problem, there appears to be an assumption that contractors would need to build the electrical infrastructure on their remote and temporary construction sites to charge the ZEVs required by this regulation. This is highly problematic for several reasons. Infrastructure would need to be built before construction starts to be able to charge the ZEVs required by this regulation. It may take up to several years for the infrastructure to be built, therefore, the project would be delayed until then. This delay in projects would have devastating consequences. Not only would it hinder the development of our state, but it would also dramatically increase the cost of construction. The dramatic increase in cost would likely result in fewer projects being financed, further hindering the development of our state.

One question that has largely been disregarded is: how practical is it for remote and *temporary* construction sites to develop electrical infrastructure? Since most construction sites are temporary, all the electrical infrastructure that will be established to simply work on the project will eventually go to waste once the project is completed. While there are temporary electrical solutions, many of them do not have the capacity to meet the charging standards required for large fleets of heavy-duty vehicles. It is concerning that CARB does not have a solution for the infrastructure that will eventually go to waste once a construction project is completed, nor have they calculated the impact that this specific waste will have on the environment.

Additionally, there are issues with the proposed exemptions and extensions, limitations of ZEVs in construction settings, environmental concerns, issues with relying solely on electricity to reduce emissions, and there was insufficient time to review the substantial changes that have recently been made. This will be explained in greater detail below.

1. Exemptions & Extensions

AGC of California acknowledges that CARB extended the ZEV Infrastructure Construction Delay extension from one year to up to two years and added the ZEV Infrastructure Site Electrification extension of up to five years. While we appreciate the attempt to make this regulation more feasible, it is our conviction that this is still not enough time to carry out the vast infrastructure that will need to be developed to meet the demands of this regulation. Utility companies have commented stating that while they may be able to currently assist smaller fleets, there will be challenges supplying the necessary electricity to support the charging of large fleets in the time currently proposed. Since this regulation requires large fleets to develop infrastructure all at once, utility companies will be severely limited to complete the vast number of requests. Contractors should not be punished if utility companies are not able to provide the necessary infrastructure within five years, therefore, we propose extending it further to account for the numerous issues that are likely to occur. It is difficult to provide an exact time of what it should be extended to because every situation will be different depending on the project, therefore, the language should be flexible to accommodate variation. We propose the following language to be incorporated in Section 2015.3(c)(2)(A):

> "Site Electrification Delay Time Period. Fleet owners may request an extension based on the amount of time the utility determines it needs to supply the needed power to the site. Fleet owners may request an additional extension if the utility company determines it needs more time to supply the needed power to the site."

Additionally, the administrative burden that will be placed upon fleets to apply for the proposed extensions is concerning. Contractors will need to hire a bookkeeper solely to handle all the filings, which adds an additional financial cost on top of the astronomical costs associated with building the necessary infrastructure and converting one's fleet over to zero-emissions. There is also no guarantee that fleets who will need these extensions will obtain them due to the current approval system. First, to obtain the ZEV Purchase Exemption, contractors will need to obtain documentation from at least two different manufacturers saying that they are not able to provide a ZEV of a specific configuration. This is highly problematic because the regulation does not require manufacturers to provide this information to contractors; what will happen in the incident that manufacturers refuse to provide this information to contractors? Due to financial implications, the likelihood manufacturers will provide the requested information is extremely low without regulatory intervention. Second, AGC of California proposes that the review of extension and exemption requests be done by a panel of experts who have first-hand knowledge of the industry, manufacturer availability, and utility capacity.

Lastly, we encourage CARB to add water trucks, dump trucks, cranes, bucket trucks, rentals, and vehicles not homed at the company yard to exemptions, section 2015(c). It is common between non-employee Owner-Operators for some of these vehicles to be taken home by the operator at the end of a shift. DC charging capabilities are not available for residential locations, therefore, will not be able to charge their vehicle at home.

2. Limitations of ZEVs in Construction Settings

In addition to the lack of power on remote construction sites, the limitations of ZEVs include the impracticality of hauling due to battery weight, potential damage to the battery packs, decreased operability during the summer, and inability to operate auxiliary equipment. First, the battery weight may prevent some vehicles from being hauled onto or from a construction site, which is essential for some projects depending on their location. Second, batteries are likely to be damaged during construction; for instance, there is an enormous amount of dirt, rocks, spoils, and moisture on construction jobsites. Water and wet dirt are almost always present on job sites for dust control and compaction requirements. It will be problematic for these vehicles to operate efficiently in these environments without additional engineering and heavier protection. While traveling on dirt haul roads, on- and off-site there is an enormous amount of jostling and shaking that vehicles on smooth pavement would not be subjected to. The intense duty will create additional problems with battery connections, possibly breaking or puncturing batteries, or causing unacceptable expensive battery pack failures. Third, extreme temperatures directly affect battery performance and longevity. High heat typical in the state during summertime, will cut the performance of batteries by over 50% regardless of load and use. Much of construction occurs during the summer when there are lower chances of precipitation. Lastly, electric vehicles may not be able to operate the auxiliary equipment on board trucks because service trucks haul compressors, lifts, welders, and pumps using the same fuel tank, engine power, or a PTO, which will drain the battery disproportionality. All in all, it is likely that the ZEVs will not be able to meet the standards to complete a project on time and on budget due to the vehicle's limitations.

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3. Environmental Concerns

There is not a clear solution of what California will do regarding the toxic waste that will be generated once the batteries from ZEVs die. ZEV batteries last 10-15 years at the most in moderate climates, therefore, it is expected that there be large amounts of EV battery waste starting in 2034. There is no electric battery recycle plant in the state of California and limited plants throughout the country. What will California do with all the battery waste that will be generated due to the requirements of this regulation? It is important that this be addressed as soon as possible to prevent dangerous disposal of hazardous waste.

AGC of California asserts that CARB should only permit ethically sourced materials within the supply chain for the construction and manufacturing of semiconductors and lithium batteries (cobalt). According to National Public Radio (NPR), "[m]ost of the cobalt mined in the world today comes from the Democratic Republic of Congo, where there are widespread child labor and other human rights problems". For instance, there are thousands of Congolese people touching and breathing toxic cobalt dust, many of which are young mothers with children strapped onto their backs. If California is moving towards going all-electric, then it is important that the resources we obtain are ethical.

Lastly, it is argued that the environmental impacts outweigh the economic costs of the regulation, however, there is some evidence that suggests environmental impacts may potentially be exaggerated. Environmental Research Letters published the article, "Environmental and economic impact of electrical vehicle adoption," where the authors conducted a comprehensive impact assessment of battery electric vehicle (BEV) adoption (Chen, Carrel, Gore, & Shei, 2021). In this article the authors state that "[a]lthough BEV adoption leads to decreases in tailpipe emissions, increased manufacturing activity as a result of productivity increases or subsidies can lead to growth in non-tailpipe emissions that cancels out some or all of the tailpipe emissions savings". Additionally, the Emissions Analytics released a newsletter in May 2022 highlighting research that demonstrates pollution from tire wear can be 1,850 times worse than car exhaust emissions in real-world settings. Since CARB does not take tire wear emissions into consideration when evaluating the cost versus the benefit of the regulation, the proposed environmental impacts may be misleading.

Emissions Analytics first released information in their 2020 press release that pollution of tire wear can be 1,000 times worse than car exhaust emissions, however, since then they have conducted more testing and analyses under a wide range of driving conditions and performed a detailed chemical analysis. Tire wear mass emissions were measured by high-precision scales to weigh all four wheels (tires and rims together without detaching) over at least 1,000 miles on real roads along with a proprietary sampling system that collects particles at a fixed point immediately behind each tire that are drawn into a real-time detector measuring the size of distribution of particles by mass and number. Particles from 10 microns down to 6 nanometers were measured. Tailpipe particles were measured using a diffusion charger analyzer for dynamic mass concentration and condensing particle counter for number concentration, coupled with a standard Portable Emissions Measurement System (PEMS). Their results indicate that tire wear emissions are 1,850 times greater than tailpipe emissions. They discuss risks associated with battery electric vehicles (BEVs): battery

weight can result in tire emissions that are almost 400 more times greater than real-world tailpipe emissions.

While AGC of California supports action to decrease tailpipe emissions, it is important that benefits outweigh the costs imposed by the regulation. While it may be impractical to incorporate all possible factors into the model, it is important that as many key factors be incorporated as possible to ensure that real-world situations are taken into consideration. It is concerning that we may be trading out one form of emissions (tailpipe emissions) for another type (tire wear and manufacturing emissions).

4. Issues with Relying Solely on the Electrical Grid

There is great concern with relying solely on the electrical grid to support the charging of all the ZEVs that will be required by this regulation. As California has seen over the past several years, power outages have increased due to extreme weather events all year round. From the extreme heat in the summer to the extreme storms in the winter, Californians have experienced regular and persistent power outages across the state. According to Payless Power, California accounted for 24% of all the power outages in the United States between 2021 and 2022. Additionally, California is number 1 in the top 10 states with the most power outages over the past 20 years due to the increasing temperatures, droughts, wildfires, and a strained power grid. How will fleet operators be able to charge their vehicles in the event of a power outage? Power outages can occur for a few hours up to several weeks. Depending too heavily on the electrical grid will result in an inability to charge vehicles during such times, which will result in project delays and increased costs.

A further demonstration that California does not have the electrical resources to meet current demand is that California is already importing approximately 30% of its power needs. Since California cannot meet the current electrical demand, how will the state meet the future demand when the ACF regulation will only increase the demand for daily charging? All in all, AGC of California urges CARB to upgrade the electrical grid *as soon as possible* so that energy can reliably get to consumers that would make this regulation obtainable. It is optimal to have electricity available *before* implementing such regulations as opposed to figuring everything out as we go.

5. Insufficient Time for Review

Lastly, sufficient time to review the substantial changes that have been made to this regulation since the last board meeting was not provided. The notice of the 15-day changes came out to be 134 pages in total. It is unreasonable to assume that 15 days is enough time to review this many changes in depth. We believe that a 30-day or 45-day comment period would have been more appropriate to ensure that you receive high-quality comments and feedback that will assist in making this regulation feasible and obtainable.

Conclusion

All in all, there are numerous issues that need to be resolved within the Advanced Clean Fleets regulation. AGC of California urges the California Air Resources Board (CARB) to postpone the adoption of this regulation until the above-mentioned issues are resolved. We appreciate CARB for allowing AGC of California to comment on the Advanced Clean Fleets Regulation. We assert that CARB consider the comments we have expressed above. Additionally, we support the comments

made by the California Industry Air Quality Coalition (CIAQC) and ask that CARB deeply consider the comments made in their letters as well. If you have any questions regarding our comments, please contact Brian Mello at 603-770-9264 (email: mellob@agc-ca.org). We appreciate the opportunity to comment and hope these concerns are addressed.

Sincerely,

Brian Mello

Brian Mello
Associate Vice President of Engagement & Regulatory Affairs
Associated General Contractors of California