May 28, 2019

Clerk of the Board

California Air Resources Board
1001 I Street

Sacramento, California 95814

**Re: Comments to Proposed Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains (Zero-Emission Powertrain Certification Regulation)**

Thank you for the opportunity to respond to the proposed certification and test procedures for Zero-Emission Heavy-Duty Vehicles. We appreciate the opportunity to work with CARB to create an industry and products that eliminate emissions.

**These rules appear to be based upon combustion engine certification framework. This seems unnecessary and impractical to apply combustion engine certification standards for the certification of an all-electric zero-emission vehicle. Please help us understand how applying the same framework furthers CARB’s emission reduction goals.**

The comments below consist of two parts: 1) a general comment regarding the overarching nature of the proposal and 2) direct comments on specific sections of the proposal.

1. **General Comment**

**We disagree with the proposal as it is presented. Several elements within the proposal would damage the companies building the equipment currently deployed under these programs and work against CARB’s air quality objectives.** The proposed rules apply standards to emerging technology that would slow innovation due to the diversion of resources to unnecessary compliance activities rather than focusing on further advancing vehicle performance. These proposed rules would result in substantial cost and effort for companies such as Orange EV without benefit.

We respect CARB’s mission to promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants, while recognizing and considering the effects of the state’s economy, per the Mulford-Carrell Act. The rules proposed seem beyond the scope of this directive. Further these rules appear to impose on-road vehicle standards to off road vehicles while requiring outdated dealer-based sales & service models. While built for both on and off-road usage, terminal trucks are principally off-road equipment used in goods movement hubs (like distribution centers, rail intermodal site, seaports, etc.). The proposed rules would place an unnecessary technical burden on OEMs, forcing them to apply passenger on-road vehicle technology requirements to equipment that has specialized use principally for off road, industrial applications. To demonstrate this and help clarify, please note that Orange EV’s electric terminal trucks will be funded by the upcoming Clean Off-Road Equipment (CORE) incentive program.

The proposed regulations, by applying technology requirements that are unnecessary, will result in OEMs delaying innovative projects driving emissions reduction in California. This is especially applicable to vehicles participating in the CORE program, as these are specialized vehicles whose customers are sophisticated business entities and the need for these additional rules and technology inclusion (SAE standards, in particular) are unnecessary and can present various technological issues. For instance, the SAE standards have an array of codes that are predefined and are ubiquitous across all automobiles; however, the equipment types participating in CORE are industrial, construction and agricultural equipment, not automobiles. Applying this SAE standard on non-automobiles does not make sense. Furthermore, the SAE standards are based upon a combustion automobile and do not have codes necessary to properly evaluate the performance of an electric vehicle.

Imposing SAE requirements would unnecessarily increase the cost to fleets of deploying electric specialty vehicles like Orange EV’s electric terminal truck and erode the value proposition that has helped drive early adoption and conversion to zero emissions vehicles. Higher volume automakers might be able to afford new ground up designs, while also being able to impose new requirements on their vendors. For specialized industrial vehicles with lower volumes, many parts must be “off the shelf” with suppliers that may or may not have supported the automotive market in the past. The proposed rules could delay an adoption of new technologies.

In short, CARB is proposing requirements which appear to extend past its mission and goals. In addition, these rules, as presented, are not applicable to the off-road equipment like that included in CORE and impose inapplicable standards upon electric equipment. These proposed changes could stifle innovation, lead to fewer OEMs pursuing zero-emission technologies, and hamstring an OEM-based service model proven superior to the status quo. The proposed rules could increase the cost of Orange EV’s direct service model while lowering the quality of service.

1. **Specific Comments**

In the event the proposed changes cannot be modified broadly, please consider the following specific changes:

* **§B.3.1.2 -** Requires vehicles to conform to SAE J402, a standard which incorporates the symbols utilized for the operation of a combustion vehicle, to be include on an electric vehicle to obtain certification. Since SAE has not changed their standards to accurately reflect the operating principles of electric vehicles; therefore, an OEM cannot be reasonably required to apply a standard that is based upon notifications for a vehicle with a completely different operating methodology. **We recommend you eliminate the reference to SAE standard for electric vehicles/equipment.**
* **§B.3.1.4** **-** Requires OEMs to apply SAE standards that are utilized in CCR Title 13 1971.1(h)(2). §1971’s stated purpose is

“to establish requirements for engine manufacturer diagnostic systems (EMD systems)….The EMD systems…shall monitor emission systems in-use for the actual life of the engine and shall be capable of detecting malfunctions of the monitored emission systems”

The entire purpose of the statute and all requirements contained therein are designed to establish standards for monitoring emissions from combustion engines. The SAE standard was created with this engine type in mind. It is obtrusive to require a Zero-Emission Vehicle to comply with a standard written specifically for combustion vehicles. **We recommend you eliminate the reference to SAE standard for zero-emission vehicles/equipment.**

* **§B.3.3.3 -** This proposed change requires an OEM to provide all of its repair and diagnostic manuals to third-party repairs facilities. This standard presumes the OEM does not self-perform repair and maintenance at a level acceptable to the customer. Orange EV, an OEM, self performs much of the necessary work at a level which we believe, and our customers agree, that surpasses current industrial service levels. Further, this language fails to require that those repair facilities to be certified by the OEM. This could lead to unqualified parties attempting to make repairs on a vehicle which could result in at least the owner being financially harmed and at most serious bodily injury to a person or person. **We recommend that you add language to clarify that this clause only applies to OEMs who do not use a direct service model and are therefore enabling the third parties certified by the OEM itself to perform service.**
* **§C.1.1.4 -** Please clarify whether the proposed language would require re-certification only if a different battery technology were used. A replacement battery with substantially similar specifications should be allowed without requiring re-certification
* **§C.4.4.1 -** Requires the Owner’s Manual be provided to third-party repairs facilities. This language fails to recognize that the OEM itself may provide direct service to its customers or to require repair facilities, where appropriate to the needs of the customer, to be certified by the OEM. This could lead to unqualified parties attempting to make repairs on a vehicle, potentially resulting in the vehicle owner being financially harmed, or more seriously, causing serious bodily injury to a person or persons. **We recommend that you add language to clarify that this clause only applies to OEMs who do not utilize a direct service model and to OEM’s that utilize third parties, certified by the OEM, to perform service activities.**
* **§C.4.3.3. Please change this to reflect the diagnostic and repair manual only be made available to third parties repair facilities certified by the OEM.**
* **§F2-5 “Certification Procedural Requirements”** The information being requested is unnecessary to determine the emissions of a zero-emission vehicle. Although this level of detail would be necessary to determine the emission profile of a combustion engine, there is no need to require this level of detail on a vehicle with no tailpipe.

In closing, the proposed rules would unnecessarily add cost in both time and money to the certification process for the OEMs and CARB thereby burden and impede development and deployment of new clean technologies.

Thank you for taking the time to consider the proposed changes and we look forward to working with CARB on these issues.

Sincerely,



Jason Dake

Vice President Legal & Regulatory Affairs

Orange EV LLC