



July 19, 2021

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, CA 95814

Subject: On-Board Diagnostic (OBD) System Requirements and Associated Enforcement Provisions for Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles and Engines, and Heavy-Duty Engines

Dear Members of the Board,

The Alliance for Automotive Innovation (Auto Innovators)¹ appreciates the opportunity to provide comments on the California Air Resources Board (CARB) On-Board Diagnostic (OBD) regulatory proposals.² Auto Innovators represents automakers and automotive suppliers that produce over 95 percent of the new vehicles sold in California. Our association and members are committed to working cooperatively and constructively with CARB to ensure vehicles developed and produced are efficient, clean, and affordable for all. Subject to the recommendations provided in this letter and the attachments, we support the proposed changes to the OBD regulations.

Despite the differences that remain, CARB staff has worked tirelessly with the industry to understand and consider our concerns. Over the past two years, industry and CARB have spent well over 100 hours in 50+ meetings, conference calls, and web meetings, in addition to engaging in discussions in hundreds of emails and phone calls. CARB staff always made themselves available to discuss their new proposals, our concerns and recommendations, and to look for ways to address industry concerns while still meeting their goals of a robust OBD system. These meetings were incredibly productive, allowing an open and honest exchange of ideas, data, and analysis. We sincerely appreciate the professional and transparent process and the hard work that CARB staff put into these regulations.

¹ Formed in 2020, the Alliance for Automotive Innovation members include vehicle manufacturers (BMW, FCA, Ferrari, Ford, GM, Honda, Hyundai, Isuzu, Jaguar Land-Rover, Karma, Kia, Maserati, Mazda, Mercedes-Benz, Mitsubishi Motors, Nissan, Porsche, Subaru, Suzuki, Toyota, and Volkswagen), original equipment suppliers, technology companies, and other automotive-related companies and trade associations. The Alliance for Automotive Innovation is headquartered in Washington, DC, with offices in Detroit, MI and Sacramento, CA. For more information, visit our website <http://www.autosinnovate.org>.

² CARB, [Notice of Public Hearing to Consider Proposed Revisions to the On-Board Diagnostic System Requirements and Associated Enforcement Provisions for Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles and Engines, and Heavy-Duty Engines](#), Released June 1, 2021

For our part, automakers have long supported OBD requirements. In fact, automakers installed OBD devices on vehicles before CARB adopted the first OBD regulations for 1991 and newer vehicles. The OBD system monitors for malfunctions during every second of vehicle operation, and, for some monitors, even when the vehicle is parked and turned off. As a result, every state that has an emissions inspection program has replaced the costly, time-consuming, and limited dynamometer or idle test with a more efficient, effective, and comprehensive check provided by the OBD system.

Current OBD systems are exceptionally sensitive, detecting malfunctions at the near-zero emissions levels of modern cars. The result is that current OBD systems are extraordinarily complex, governed by regulatory requirements that have grown exponentially over the past two decades. The current regulations require highly specialized and talented engineers to interpret, design, develop, validate, and certify OBD systems. In modern vehicles, the OBD system consumes about half of the vehicle's engine and transmission computing power – that is, monitoring the emission control system requires as much computing power as controlling the engine, transmission, and emission control systems.

Automotive engineers must scrutinize virtually every component or system added to a vehicle to determine whether it could affect emissions or affect the OBD system. If a malfunction could affect either emissions or the OBD system, engineers must develop a monitor for that component or system. The intent, which automakers support, is to ensure that near-zero emission vehicles remain near-zero emission throughout their lives.

There are, of course, tradeoffs for CARB developing the regulatory requirements and for automakers developing OBD systems. Turning on the Check Engine light prematurely or when no malfunction is present will quickly result in consumers ignoring the light. Moreover, just detecting a malfunction and turning on the Check Engine light is only half of the problem. If the malfunction cannot be repaired or the repair is cost-prohibitive, consumers will lose confidence in the system, ignore the Check Engine light, and/or seek political changes to the emissions inspection programs. These are real concerns that could ruin an otherwise highly effective program.

Additionally, the all-encompassing nature of the OBD regulations means that manufacturers do not develop some otherwise innovative technologies that might reduce emissions, because the OBD system cannot effectively monitor the technology. Without a clear path to OBD monitoring for a technology, there is no reason for a manufacturer to spend the resources to explore a technology that might never be implemented.

As noted above, automakers and CARB staff have worked very closely for the past two years developing the proposed OBD regulations. Nonetheless, automakers still have concerns with the implementation of the requirements and believe that some requirements do not provide a benefit commensurate with the cost. In other cases, automakers are concerned that a lack of separation between a passing system and a failing system will result in false failures. In fact, no system can detect every possible malfunction or deliberate attempt to circumvent the OBD

system for the purpose of inappropriately passing a Smog Check. We have been and remain concerned that this is the standard being set.

We would like to highlight our concerns with the cost analysis (for an example, see item 43 in Attachment 1). We recognize that CARB staff and industry rarely agree on costs; CARB staff typically use more optimistic assumptions, resulting in lower costs than those projected by automotive engineers. In addition, we recognize that differences in costs are unlikely to persuade the Board to approve or disapprove the recommendations contained in the ISOR. Nonetheless, the Board should recognize that the costs of developing, testing, documenting, and certifying vehicles to the OBD regulations are far from trivial, and the ISOR should contain an honest and thorough evaluation of costs associated with changes.

We continue to believe the cost of OBD requirements should consider consumer costs associated with vehicle repair including the “repairability” of the malfunction. As noted earlier, knowing a malfunction exists provides no value if the actual cause of the malfunction is either unknown, cannot be repaired (e.g., software issues), or the repair is cost-prohibitive. Thus, we recommend that CARB consider additional costs such as these which could affect the overall costs-benefit analysis of the regulation.

Finally, we have attached detailed technical comments on the proposed changes. All of these have been provided to and discussed with staff. We are still working with CARB staff to fine tune the regulations on several of these. We recommend the board approve the proposed changes and direct staff to continue working with automakers on final adjustments.

Again, we appreciate the hard work and cooperation by the OBD staff, and the opportunity to comment on the OBD regulations. We look forward to working with CARB staff as we implement the changes. If you have any questions or need additional information, please feel free to contact me.

Sincerely



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Attachments:

- Attachment 1: Recommended changes
- Attachment 2: CSERS Diesel Trackers
- Attachment 3: BPU Catalyst Aging Presentation
- Attachment 4: Additional Items Related to SAE J1979
- Attachment 5: Reporting Default Actions as Auxiliary Emissions Control Devices (AECDs)

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