

State of California
Air Resources Board
Board Item Summary

Item # 21-6-1: 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

Staff Recommendation:

Staff recommends that the California Air Resources Board (CARB or the Board) approve revisions to the regulation and associated enforcement provision for On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles and Engines (referred to as OBD II), and revisions to the regulation and associated enforcement provision for On-Board Diagnostic System Requirements for Heavy-Duty Engines.

Discussion:

On-board diagnostic (OBD) systems are mainly comprised of software designed into the vehicle's onboard computer to detect emission control system malfunctions as they occur by monitoring virtually every component and system that can cause increases in emissions. The Board originally adopted comprehensive OBD regulations in 1990, requiring all 1996 and newer model year passenger cars, light-duty trucks, and medium-duty vehicles and engines to have OBD systems. The Board updated the OBD requirements in 2002 which established the OBD II requirements and enforcement requirements for 2004 and subsequent model year light-duty and medium-duty vehicles and engines. In 2005, the Board adopted OBD system requirements for heavy-duty engines and vehicles, referred to as HD OBD. The Board subsequently updated the HD OBD regulation in 2009 and adopted HD OBD-specific enforcement requirements. In adopting the OBD II and HD OBD regulations, the Board directed staff to continue to follow manufacturers' progress towards meeting the regulations' requirements, and to propose revisions to the regulations should modifications to the requirements be deemed appropriate. Since the regulations were last amended, staff has met with stakeholders in teleconferences and face-to-face meetings, including a public workshop in February 2020. Through these discussions, and through evaluations of manufacturers' progress in meeting current requirements, staff identified areas in which modifications to the OBD II and HD OBD regulations are needed to provide improved emission control system monitoring and to address industry implementation concerns for future model year vehicles and engines. Staff has also participated in numerous teleconferences with SAE International (SAE) committee members to help develop the specifications in the SAE standards related to the proposed new standardization requirements associated with the incorporation of Unified Diagnostic Services (UDS) features.

The proposed amendments include incorporating UDS features that would improve and expand data to be stored by the OBD systems, revising the cold start emission reduction

strategy monitoring requirements, and adding details to the data required to be submitted for diesel catalyst/adsorber and oxides of nitrogen sensor monitoring. Staff is also proposing amendments to address issues regarding the particulate matter filter monitoring requirements and to modify a few requirements to address manufacturer implementation issues. Finally, staff is proposing to update the associated OBD II and HD OBD enforcement regulations to align with the proposed changes to the OBD II and HD OBD regulations.

Summary and Impacts:

The proposed revisions to the OBD regulations are expected to add more costs due to hardware changes, software changes, increased testing costs, and additional reporting costs. The incremental cost to light- and medium-duty manufacturers is estimated to be \$0.57 to \$6.32 per vehicle, while the incremental cost to heavy-duty manufacturers is estimated to be \$12.00 to \$21.65 per engine. These are the expected incremental costs to comply with the regulations and do not include the costs of non-compliance (i.e., deficiency fines). These costs will likely be passed on to the consumer in the form of increases to the retail price of a vehicle or engine. The incremental cost to the consumers, which includes the costs to manufacturers along with manufacturer and dealer mark-ups, is estimated to range from \$0.67 to \$7.37 for purchasers of light- and medium-duty vehicles to \$14.34 to \$25.87 for purchasers of heavy-duty vehicles, which is negligible compared to the typical price of a vehicle. The proposed amendments are not expected to have an adverse impact on the environment.