

State of California  
AIR RESOURCES BOARD

**ATTACHMENT D:**

**Addendum to the Staff Report: Initial Statement of Reasons for Rulemaking**

**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)**

Public Hearing Date: June 27, 2019

**I. Background**

On December 31, 2018, the California Air Resources Board (CARB or Board) released for a 45-day comment period the Staff Report: Initial Statement of Reasons (Staff Report) for the rulemaking action entitled, “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.” In Section IX of the Staff Report, staff described the estimated economic impacts of the proposed regulation (Economic Impacts Assessment), and in Appendix E to the Staff Report (Appendix E), staff described the purpose and rationale for each regulatory provision.

Staff has prepared this addendum to supplement the information provided in the Economic Impacts Assessment and Appendix E. This addendum is intended to provide additional clarity and does not alter the requirements, rights, responsibilities, conditions, or prescriptions contained in staff’s proposal. Furthermore, this addendum refers to the language as originally released for comment on December 31, 2018, and does not cover any modifications being proposed as part of this 15-day change package.

**II. Supplemental Information on the Economic Impacts Assessment**

Section IX.B of the Staff Report

Staff would like to correct the description of the methodology used to determine the hourly cost for a mechanical engineer. The language initially published in the Staff Report incorrectly described that staff rounded the mean base hourly wage of a mechanical engineer (\$45.32) up to \$50, then doubled it to account for benefits and

other employee costs, to arrive at the total estimated labor cost of \$100 per hour. The actual methodology used was the same methodology used in the economic analysis for the rulemaking entitled, “California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation” (HD Phase 2), released on December 19, 2017, and approved for adoption by the Board on October 1, 2018. Specifically, staff applied a multiplicative factor of 2.1 to the base hourly wage to account for benefits and other employee costs, then rounded that value up to \$100 per hour.

In addition, staff is providing an additional reference (Appendix H – Further Detail on Cost and Economic Analysis) to the rulemaking record from the HD Phase 2 rulemaking, which fully describes the methodology mentioned above.

### **III. Supplemental Rationale Applicable to the “Proposed California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains,” as set forth in Appendix E to the Staff Report**

#### Parts II.B.1, II.B.3, II.D, II.F, II.G, II.I, II.L, II.M, II.N, II.P, II.W, II.Y, and II.AB

In addition to the rationale provided in Appendix E, the provisions of these parts are necessary to align the warranty and recall requirements applicable to zero-emission powertrains with the analogous requirements applicable to internal combustion engines and vehicles so as to minimize confusion and complexity for regulated entities.

#### Part II.B.2

In addition to the rationale provided in Appendix E, this warranty period is necessary as it represents the required minimum warranty length for battery-electric and fuel-cell vehicles funded through California’s Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), which targets early commercial heavy-duty vehicle technologies.

#### Part II.X

In addition to the rationale provided in Appendix E, the proposed failure levels are necessary as they would ensure that manufacturers are subject to the warranty recall requirements once they reach a certain failure threshold, which was derived based on existing thresholds for warranty recall of internal combustion engines and vehicles and the expected sales volumes in zero-emission powertrain certification families.

## Part II.AB

In addition to the rationale provided in Appendix E and previously in this addendum, this paragraph provides further support for the necessity of the proposed provisions in this part. While these provisions are largely aligned with the analogous provisions for internal combustion engines and vehicles, this proposal would offer manufacturers other potential options for avoiding a recall. Staff believe it is appropriate to provide alternatives for remedying component failures, such as through extended warranties or service campaigns, if they are at least as effective as warranty recalls at remedying the failures.