State of California
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER THE PROPOSED CALIFORNIA GREENHOUSE GAS EMISSIONS STANDARDS FOR MEDIUM- AND HEAVY-DUTY ENGINES AND VEHICLES AND PROPOSED AMENDMENTS TO THE TRACTOR-TRAILER GHG REGULATION

Public Hearing Date: February 8, 2018
Agenda Item No.: 18-1-4

I. GENERAL

A. The Staff Report: Initial Statement of Reasons for Rulemaking (ISOR or staff report), "Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation," released on December 19, 2017, is incorporated by reference herein. The staff report, which is incorporated by reference herein, contained a description of the rationale for the proposed amendments. On December 19, 2017, all references relied upon and identified in the staff report were made available to the public. All documents associated with this rulemaking were made available to the public and are available on the California Air Resources Board's (CARB or Board) website at: https://www.arb.ca.gov/regact/2018/phase2/phase2.htm. Background materials on emission and economic data, as well as credit tracking template, were also made available to the public as supplemental to the staff report at: https://www.arb.ca.gov/msprog/onroad/caphase2ghg/rulemaking/background_materials.htm.

On February 8, 2018, the Board conducted a public hearing to consider staff's proposed amendments. At the conclusion of the hearing, the Board approved Resolution 18-2 for adoption of the proposed California Phase 2 Greenhouse Gas (GHG) standards that would establish new GHG emission standards for trailers, amend existing regulations to establish more stringent GHG standards applicable to tractors, vocational vehicles, pickup trucks and vans (PUVs), and medium- and heavy-duty engines, and amend requirements for glider vehicles, glider engines, and glider kits. The Board also approved for adoption amendments to CARB's existing Tractor-Trailer GHG Regulation that would provide trailer fleet owners the option of complying with the Tractor-Trailer GHG Regulation through the purchase of a Phase 2 certified trailer, or the installation of Phase 2 aerodynamic technologies and low-rolling resistance tires that are components of Phase 2 certified trailer configurations. These amendments largely harmonized California requirements with federal Phase 2 standards, allowed CARB to certify new motor vehicle engines and new motor vehicles as well as trailers to GHG standards, and gave CARB the authority to enforce the regulatory requirements. The amendments to these regulations are codified in Title 13, California Code of Regulations (CCR), sections 1956.8, 1961.2, 1965, 2036,

2037, 2065, 2112, and 2141 and Title 17, CCR, sections 95300, 95301, 95302, 95303, 95304, 95305, 95306, 95307, 95311, 95662, and 95663 including the following test procedures incorporated by reference herein:

- Amended test procedure entitled "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," as last amended December 19, 2018, incorporated by reference in Title 13, CCR, section 1965 and new Title 17, CCR, section 95663(d).
- Amended test procedure "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," last amended September 1, 2017, incorporated by reference in Title 13, CCR, sections 1956.8(b) and 2065.
- Amended test procedure "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," last amended September 1, 2017, incorporated by reference in Title 13, CCR, section 1956.8(d).
- Amended test procedure "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," last amended September 2, 2015, incorporated by reference in Title 13, CCR, section 1961.2(d).
- New label specifications entitled, "California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles," which would be incorporated by reference in Title 13, CCR, section 1965.

These proposed amendments and associated test procedures were initially proposed by staff and described in the Notice of Public Hearing (45-day notice) and staff report, along with suggested modifications in Attachment G to Resolution 18-2. The modifications in Attachment G to Resolution 18-2 were made in response to comments received after the staff report was published on December 19, 2017.

In accordance with Government Code section 11346.8, the Board directed the Executive Officer to adopt the proposed amendments, as modified, after making the modifications and any other appropriate conforming modifications, as well as any additional supporting documents and information available to the public for a period of at least 15 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

After the February 8, 2018 public hearing, staff proposed modifications to the originally proposed amendments to Title 13, CCR, sections 1956.8 and 2036 and to Title 17, CCR, sections 95301, 95302, 95303, and 95663. Staff additionally proposed modifications to the incorporated test procedures. The text of the proposed modifications to the originally proposed regulation and

supporting documents were made available for a supplemental 15-day comment period through a "Notice of Public Availability of Modified Text" (15-day notice) and were posted on July 3, 2018, on CARB's website at https://www.arb.ca.gov/regact/2018/phase2/phase2.htm, accessible to all stakeholders and interested parties.

Following the 15-day notice and comment period, staff reviewed all 15-day written comments received. One commenter provided comments relating to environmental issues discussed in the staff report released on December 19, 2017. Although these environmental issues are beyond the scope of the amendments discussed in the 15-day notice, nonetheless, staff prepared written responses entitled, "Responses to Comments on the Environmental Analysis for Proposed Amendments" in accordance with CARB's certified regulatory program, as stated in Title 17, section 60007, to comply with the California Environmental Quality Act (CEQA). The Executive Officer presented to the Board staff's written responses to environmental analysis comments for consideration and approval at a subsequently scheduled public hearing held on September 27, 2018. At the conclusion of the second board hearing, the Board repealed Resolution 18-2 and approved the response to environmental comments set forth in Attachment G to Resolution 18-32.

The Board also directed the Executive Officer to finalize the Final Statement of Reasons (FSOR) for the regulatory amendments and to submit the final rulemaking package to the Office of Administrative Law for review. This FSOR identifies and provides the rationale for the modifications made to the originally proposed regulatory text, including non-substantial modifications and clarifications made after the close of the 15-day comment period. This FSOR also contains a summary of the comments received by CARB on the proposed amendments during the 45-day and 15-day comment periods and oral comments given at the Board hearing on February 8, 2018, CARB's responses to those comments, and modifications made to the original proposal in the ISOR.

B. MANDATES AND FISCAL IMPACTS TO LOCAL GOVERNMENTS AND SCHOOL DISTRICTS

The Board has determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code.

C. CONSIDERATION OF ALTERNATIVES

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective and less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

A. MODIFICATIONS APPROVED AT THE BOARD HEARING AND PROVIDED FOR IN THE 15-DAY COMMENT PERIOD

Subsequent to the February 8, 2018, board hearing, modifications to the original proposal were made in order to address comments received during the 45-day public comment period. Staff released the 15-day notice that presented modifications to the regulatory and test procedure text pursuant to the Board's direction provided in Resolution 18-2. These modifications were explained in the "Notice of Public Availability of Modified Text" that was issued for a 15-day public comment period that began on July 3, 2018 and ended on July 18, 2018. Summarized below are the most significant modifications and staff's rationale for proposing such modifications:

1. Title 13, CCR:

    a. Section 1956.8 was modified to delete the Health and Safety Code section 43107 from the Note for Authority Cited and Reference. This section 43107, which regulates motorcycles, was incorrectly added in a previous rulemaking to the Note of this section 1956.8, which sets forth emission standards for heavy-duty engines and vehicles.
    b. Section 2036(c)(4), (c)(4.1), (c)(8), and (c)(8.1) were modified to clarify the warranty language containing the term "except medium-duty vehicles," which excludes vehicles that weigh 8,501 to 14,000 pounds gross vehicle weight rating. The vehicle weight range was added instead of using the aforementioned term, to provide clarity to its applicability.

2. Title 17, CCR:

    a. Section 95301(b) was modified to add two trailer types to the list of trailers for which the requirements of the Tractor-Trailer GHG Regulation do not apply. These trailer types, trailers exempt from the standards and certification requirements of Phase 2 and non-aero box van trailers, were previously identified in the definition for a "Phase 2 Certified Trailer." The change was made to provide clarity as to the applicability of the requirements for exempt and non-aero box van trailers.
    b. The definition of a "Phase 2 Certified Trailer" in section 95302(a)(43.2) was modified to identify October 25, 2016, as the date corresponding to the referenced Code of Federal Regulations (CFR) section, rather than December 22, 2017. Although the two dates reference the exact same requirements, October 25, 2016, is the date the Federal Phase 2 Regulation was published in the Federal Register and is consistent with similar references for other sections referenced in the Tractor-Trailer GHG Regulation. Further, this section was modified to remove language addressing how exempt trailers and non-aero box van trailers are excluded from the definition of a Phase 2 certified trailer.

Instead, for clarity, these trailer-types are identified in section 95301(b) as trailer-types for which the requirements of the Tractor-Trailer GHG Regulation do not apply.

c. Section 95303(b) was modified to provide additional regulatory language that would establish interim procedures for the 2018 and 2019 model year trailers. The proposed language would allow CARB to review and approve Phase 2 aerodynamic performance test data that are not being processed by the U.S. Environmental Protection Agency (EPA) due to the federal court stay of the federal Phase 2 trailer standards. The interim procedures would only apply to performance data for 2018 and 2019 model year trailers since the California Phase 2 trailer certification procedures would apply to 2020 and later model year trailers.
d. Section 95303(b)(1)(C) and (b)(2)(C) were modified to correct the measurement unit of tire rolling resistance by changing it from kilograms per ton to kilograms per tonne in the Tractor-Trailer GHG Regulation. The change is to clarify that staff is referring to metric ton unit (tonne), not long ton or short ton units.
e. Section 95663(a)(2)(B) was modified to add "1" to the "Sub-Category" column of the table to correct the reference number for the footnote that was inadvertently left out of the Phase 2 emission standards for tractors.
f. As part of the original 45-day notice, staff proposed to add the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" (LDVTP) to be incorporated by reference in section 95663(d), which contains the test procedures to determine compliance with applicable GHG emissions standards. The aforementioned test procedure was also proposed to be incorporated by reference in the "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles." Section 95663(d) was modified again to delete the LDVTP reference because the dual reference in both this section and in the "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles" is redundant and potentially confusing to the reader.

3. "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles" (incorporated by reference in Titles 13 and 17, CCR):

   a. As part of the 45-day notice, staff proposed to include a restriction in sections 86.1819-14(k)(7) and 1037.150(p) that disallows advanced technology credits for medium- and heavy-duty vehicles that are required by other future California regulatory requirements. Staff has determined through discussions with industry that it is preferable to incorporate such restriction in the context of future regulatory actions that establish emission requirements for advanced technology vehicles

(e.g., potentially as part of rulemaking action proposing requirements for Advanced Clean Local Trucks). As a result, staff modified both sections to delete the aforementioned restriction.

b. Sections 1037.150(t) and 1037.635(c) was modified to require all glider manufacturers, including small manufacturers, to only use 2010 and newer model year engines in gliders certified for sale in California. This change is consistent with the current California Truck and Bus Rule, which requires nearly all diesel-fueled trucks and buses with a gross vehicle weight rating greater than 14,000 pounds operating in California to have 2010 model year engines or equivalent by 2023. Additionally, while the glider requirements are effective beginning January 1, 2017 in the federal Phase 2 program, the California glider requirements will have the same effective date as the amendment of this rulemaking.
c. Sections 1037.241 B.1. and 1037.701 B.1. were modified to include an additional compliance option for a GHG urban bus (transit bus) certified to the "Other bus CO_2 emission standard" in order to demonstrate compliance in California and to encourage the introduction of zero-emission buses. The additional compliance option would allow transit bus manufacturers who certify their California-sold transit buses with the federal custom chassis standards to produce a certain percentage of their California-sold transit buses with zero-emission buses to show compliance with the California Phase 2 requirements. This option would ensure equivalent emission reductions as if a transit bus manufacturer met the applicable CO_2 emission standard specified in §1037.105(b) but would impose less administrative burden on manufacturers who are already producing zero-emission buses.
d. Sections 86.1819-14 B.1.2. and 1037.115 B.1.2. were modified to provide a three-model year phase-in period for the schematic requirement. Manufacturers would be allowed to provide schematics representing 30 percent and 60 percent of the projected California vehicle sales volume for the first and the second model year, respectively. Starting with the third model year under the Phase 2 regulation, manufacturers would be required to provide all the applicable schematics.
e. The federal Phase 2 regulation requires manufacturers to use the SAE standard, J2727, to evaluate air conditioning (A/C) refrigerant leak rate, as part of the leakage certification. However, for A/C systems that have 3,000 grams or more of refrigerant charge and for which SAE J2727 evaluations are impossible or impractical, the federal Phase 2 regulation allows manufacturers to use "alternative means" to demonstrate equivalent refrigerant emission control. Section 1037.115 B was modified to require the alternative leakage evaluation means to possess two major characteristics of the SAE J2727 method, so that the leak rates generated using the alternative means would be comparable with those estimated using the SAE J2727 method. Additionally, the Executive Officer will review the evaluation and determine the validity of the alternative leakage evaluation means and the leakage compliance of the system.

4. On April 27, 2018, the Federal Register published a correction to 40 CFR 86.000-7, which amended the introductory language to the section. "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," (incorporated by reference in Title 13, CCR) was modified to update the aforementioned section date to this latest amended date.

5. On April 27, 2018, the Federal Register published a correction to 40 CFR 86.000-7, which amended the introductory language to the section. "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," (incorporated by reference in Title 13, CCR) was modified to update the aforementioned section date to this latest amended date.

6. "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" (incorporated by reference in Title 13, CCR) was modified to correct the erroneous numbering of "sections 16 through 21," as part of the 45-day notice to "sections 15 through 20" in Part I, Subpart J.

7. "California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles" (incorporated by reference in Title 13, CCR):

    a. Staff identified necessary clarifications regarding implementation of the Environmental Performance label requirement. Section 1 was modified to clarify that vehicles manufactured by small business manufacturers get an extra year to meet the requirement to affix an Environmental Performance label; hence, such labels would be required for model year 2022 and newer vehicles manufactured by small business manufacturers on or after January 1, 2022. This change is necessary to clarify the implementation date of consumer window label requirements for small business manufacturers, which is consistent with the date small businesses must comply with the Phase 2 regulations. Additionally, the reference detail, Title 40, CFR, sections 1036.801 and 1037.801, regarding to which medium-duty vehicles the Environmental Performance label applies was moved from "paragraph 1.(a)" to "footnote 1." This change is necessary for readability.
    b. Section 2(a) was modified to explicitly include label "format" as one of the items for which manufacturers must have approval prior to affixing the Environmental Performance labels to medium-duty vehicles. This modification is necessary to ensure that the consumer window label format on Environmental Performance labels for medium-duty vehicles is correct and consistent with the label specifications.
    c. Sections 2(b), 2(c), and 4(a) were modified to clarify that all vehicles within a certain test group and label group (if using label group) will have the same consumer window label. This change is necessary to

clarify the implementation of consumer window label requirements.

d. Section 4 was modified to clarify the use of "worst-case" configuration, and include an option to allow manufacturers to split their test groups into label groups. For example, a manufacturer could split one test group into three label groups. Label group 1: pickup truck with turbocharged engine, label group 2: pickup truck with regular engine, and label group 3: vans. This change would provide vehicle manufacturers the ability to be more specific in how they label their vehicles and would provide vehicle purchasers with a GHG rating more representative of the specific vehicle they are considering.
e. Sections 4, 5, 6, and 9 and the attachment were modified to revise the proposed ratings from letter ratings, A to J, to letter grade ratings, A+ to D, and to place the cleaner vehicle (A+ rating) on the left side of the slider bar. This first modification addressed the potential situation wherein consumers do not consider a vehicle because of an apparent failing "F" grade rating on the original A to J scale. The second change placing the A+ rating on the left side is necessary to allow vehicle buyers to more easily understand the meaning of the slider bar. Additionally, the terminology "best" was changed to "cleaner" to avoid the appearance of a value judgement.
f. Section 9 and the attachment were modified to revise the label format requirements by combining the disclaimers about comparing light-duty labels (U.S. EPA/Department of Transportation ratings) to medium-duty labels (CARB ratings). This change is necessary to simplify the label and make it clearer to consumers. Additionally, the statement for vehicles capable of operating on more than one fuel was revised. This revision addresses the scenario where test results show higher carbon dioxide (CO_2) on flexible- or dual-fuel vehicles. Finally, a note was added on the cover page of Attachment F that a crossed out label indicates the label format that was proposed as part of the 45-day notice is revised in the 15-day notice. This note is added to clearly distinguish the originally proposed label from the label that incorporates the proposed modifications as set forth in this notice of availability of modified text.

B. NON-SUBSTANTIAL MODIFICATIONS

Subsequent to the 15-day public comment period mentioned above, staff identified the following additional non-substantive changes to the regulation:

1. Title 17, CCR

    a. Section 95303. A space between two words "herein" and "or" was added in section (b)(1)(C)1.; a period after "c" was added in section (b)(1)(C)2.c; and an opening parenthesis was added in section (b)(2).
    b. Section 95663 (a)(2)(B), footnote 1. The extra "in" between "Sub-category terms are defined" and "the applicable test procedures" was deleted.

2. California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles

    a. Part 86, section 86.1819-14, B.1. The misplaced “or” that was between “…compliance with the air conditioning leakage standard in” and “40 CFR §86.1819-14(h)...” was deleted.
    b. Part 1037, section 1037.115, B.1. The remainder of the word “standard” was inadvertently left out and thus, “tandard” was added between “compliance with the air conditioning leakage s” and “in 40 CFR §1037.115(e)…”.

3. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles

    a. NOTE, section 5. The redundant opening parenthesis was deleted, which was between “in” and “section.”

4. California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles

    a. NOTE, section 1. A missing closing parenthesis was added at the end of this section.
    b. NOTE, section 5. The redundant opening parenthesis was deleted, which was between “in” and “section.”
    c. Footnote 1 to NOTE. A missing closing parenthesis was added to the last sentence of the footnote.
    d. NOTE and introductory paragraph of the test procedures. Opening and closing quotations were unnecessarily used to show the acronyms CCR and CFR respectively and were deleted in both locations.
    e. Part I, Subsection 25, 1.4. The number “1.4” was added as part of the proposed modifications and should be underlined.
    f. Part 1065, section 1065.750, subsection 3: The extra period was deleted.

5. California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles

    a. Section 1(a). For consistency in the entire document, the word “Section” was spelled in lowercase.
    b. Section 4(a). The chemical formula CO_2 was spelled out for first time use. The month of October was spelled out and the abbreviation “CO2” was changed to “CO_2” in the “Worst-Case” definition for consistency.
    c. Section 7. The duplicate word “in” was deleted to correct the typographical error.
    d. Section 9(1). The typographical error of the word “thick” was corrected in the black border specification.
    e. Section 9(7). The extra space at the end of the web link was deleted.

The above described modifications constitute non-substantial changes to the regulatory text because they more accurately reflect the numbering of a section

and correct spelling and grammatical errors, but do not materially alter the requirements or conditions of the proposed rulemaking action.

III. DOCUMENTS INCORPORATED BY REFERENCE

The regulation and the incorporated test procedures and new label specifications adopted by the Executive Officer incorporate by reference the following documents:

- Amended test procedure entitled “California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles,” last aamended December 19, 2018, incorporated by reference in Title 13, CCR, section 1965 and new Title 17, CCR, section 95663(d).
- Amended test procedure “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles,” last amended December 19, 2018, incorporated by reference in Title 13, CCR, sections 1956.8(b) and 2065.
- Amended test procedure “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” last amended December 19, 2018**,** incorporated by reference in Title 13, CCR, section 1956.8(d).
- Amended test procedure “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” last amended December 19, 2018, incorporated by reference in Title 13, CCR, section 1961.2(d).
- New label specifications entitled, “California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles,” December 19, 2018, which would be incorporated by reference in Title 13, CCR, section 1965.

The following documents are incorporated by reference in the amendments to CCR, Title 13 and Title 17 entitled, “Final Regulation Order for Phase 2 Greenhouse Gas Regulations”:

- Sections 1037.107, 1037.135, 1037.150(v), 1037.211, 1037.515(b), and 1037.526, Part 1037, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

The following documents are incorporated by reference in the amended test procedure entitled “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles,” as last amended September 1, 2017:

- Sections 86.1; 86.016-1, 86.004-2, 86.084-4, 86.078-6, 86.007-11, 86.094-14, 86.004-25, 86.004-28, 86.007-30, 86.095-35, 86.085-37, subpart A; sections 86.1301, 86.1362, 86.1370, subpart N; and sections 86.1910, 86.1912,

86.1920, subpart T, Part 86, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016; 86.000-7, subpart A; Part 86, Title 40, CFR, as last amended by the U.S. EPA on April 27, 2018.

- Part 1036, Title 40, CFR, as last amended by the U.S. EPA on June 30, 2017, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Sections 1065.10, 1065.15, subpart A; sections 1065.140, 1065.170, subpart B; sections 1065.202, 1065.220, 1065.225, 1065.247, 1065.260, 1065.266, 1065.267, 1065.275, subpart C; sections 1065.303, 1065.340, 1065.341, 1065.345, 1065.360, 1065.365, 1065.366, 1065.370, 1065.375, 1065.390, subpart D; sections 1065.510, 1065.546, 1065.590, subpart F; sections 1065.602, 1065.610, 1065.640, 1065.642, 1065.645, 1065.650, 1065.655, 1065.660, 1065.665, 1065.667, 1065.675, 1065.680, 1065.690, subpart G; sections 1065.735, 1065.750, subpart H; section 1065.845, subpart I; subpart K; and subpart L, Part 1065, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Subpart A; section 1068.101, subpart B; and subpart E, Part 1068, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

The following documents are incorporated by reference in the amended test procedure entitled “California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles,” last amended September 1, 2017:

- Sections 86.1; 86.016-1, 86.004-2, 86.084-4, 86.078-6, 86.008-10, 86.094-14, 86.004-25, 86.004-28, 86.007-30, 86.095-35, 86.085-37, subpart A; and section 86.1301, subpart N, Part 86, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40; 86.000-7, subpart A; Part 86, Title 40, CFR, as last amended by the U.S. EPA on April 27, 2018.

- Part 1036, Title 40, CFR, as last amended by the U.S. EPA on June 30, 2017, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Sections 1065.10, 1065.15, subpart A; sections 1065.140, 1065.170, subpart B; sections 1065.202, 1065.220, 1065.225, 1065.247, 1065.260, 1065.266, 1065.267, 1065.275, subpart C; sections 1065.303, 1065.340, 1065.341, 1065.345, 1065.360, 1065.365, 1065.366, 1065.370, 1065.375, 1065.390, subpart D; sections 1065.510, 1065.546, 1065.590, subpart F; sections 1065.602, 1065.610, 1065.640, 1065.642, 1065.645, 1065.650, 1065.655, 1065.660, 1065.665, 1065.667, 1065.675, 1065.680, 1065.690, subpart G; sections 1065.735, 1065.750, subpart H; section 1065.845, subpart I; subpart K; and subpart L, Part 1065, Title 40, CFR, as last amended by the U.S. EPA

on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Subpart A; section 1068.101, subpart B; and subpart E, Part 1068, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Section 27156, Chapter 5, Division 12, California Vehicle Code.

The following documents are incorporated by reference in the amended test procedure entitled "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," adopted October 21, 2014:

- Part 86, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Part 1036, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Part 1037, Title 40, CFR, as last amended by the U.S. EPA on June 30, 2017, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Part 1066, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- Subparts A and E, Part 1068, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the earlier date otherwise specified by each of the aforementioned provisions of Title 40.

- "California Certification and Installation Procedures for Medium- and Heavy-Duty Vehicle Hybrid Conversion Systems," as adopted on September 1, 2017.

The following documents are incorporated by reference in the amended test procedure entitled "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," last amended September 2, 2015:

- Section 86.143-96, subpart B; and sections 86.1801-12, 86.1802-01, 86.1803-01, 86.1805-17, 86.1820-01, 86.1823-08, 86.1838-01, 86.1844-01, 86.1845-04, 86.1846-01, 86.1848-10, 86.1865-12, 86.1866-12, 86.1867-12,

86.1868-12, 86.1869-12, 86.1870-12, subpart S, Part 86, Title 40, CFR, last amended by the U.S. EPA on October 25, 2016.

- Part 1066, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016, or on the date otherwise specified by each of the aforementioned provisions of Title 40.

- Section 600.002, subpart A, Part 600, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016.

- New label specifications entitled, “California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles,” Adopted [placeholder-EO signature date]

The following documents are incorporated by reference in the adopted test procedure entitled, “California Environmental Performance Label Specifications for 2021 and Subsequent Model Year Medium-Duty Vehicles, Except Medium-Duty Passenger Vehicles”:

- Sections 86.1819-14 and 86.1803-01, subpart S, Part 86, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016.

- Appendix VI, Part 600, Title 40, CFR, as last amended by the U.S. EPA on July 6, 2011.

- Section 1036.801, subpart I, Part 1036, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016.

- Section 1037.801, subpart I, Part 1037, Title 40, CFR, as last amended by the U.S. EPA on October 25, 2016.

These documents were incorporated by reference because it would be cumbersome, unduly expensive, and otherwise impractical to publish them in the California Code of Regulations. In addition, some of the documents are copyrighted, and cannot be reprinted or distributed without violating the licensing agreements. The documents are lengthy and highly technical test methods and engineering documents that would add unnecessary additional volume to the regulation. Distribution to all recipients of the California Code of Regulations is not needed because the interested audience for these documents is limited to the technical staff at a portion of reporting facilities, most of whom are already familiar with these methods and documents. Also, the incorporated documents were made available by CARB upon request during the rulemaking action and will continue to be available in the future. The documents are also available from college and public libraries, or may be purchased directly from the publishers.

IV. SUMMARY OF COMMENTS AND AGENCY RESPONSE

A. 45-DAY COMMENTS AND AGENCY RESPONSES

Written comments were received during the 45-day comment period in response to the public hearing notice for the February 8, 2018 hearing, and written and oral comments were presented at the Board Hearing. Listed below are the organizations and individuals that provided comments during the 45-day comment period:

Commenter	Affiliation
Rim, Julius (Jan. 18, 2018)	International Metals & Energy Technology (IMET)
Krueger, Andrew (Jan. 30, 2018)	XTRA Lease LLC (XTRA Lease)
Kolodji, Brian (Jan. 31, 2018)	Citizen (Kolodji)
Mann, Greg (Jan. 31, 2018)	Allison Transmission, Inc. (Allison)
Fox, Dennis (Jan. 31, 2018)	Citizen (Fox)
Johnston, James (Jan. 31, 2018)	Autocar, LLC and Autocar Industries, LLC (Autocar)
Perzan, Christopher (Feb. 5, 2018)	Navistar, Inc. (Navistar)
Douglas, Steven (Feb. 5, 2018)	Alliance of Automobile Manufacturers (Alliance)
Kearney, Michael (Feb. 5, 2018)	Innovus Enterprise, LLC and Unimog Market Development Team (Unimog)
Shimoda, Chris and Tunnell, Michael (Feb. 5, 2018)	California Trucking Association (CTA) and American Trucking Associations (ATA)
Blubaugh, Timothy (Feb. 5, 2018)	Truck and Engine Manufacturers Association (EMA)
Tutt, Eileen (Feb. 5, 2018)	California Electric Transportation Coalition (CalETC)
Norberg, Tracey (Feb. 5, 2018)	U.S.Tire Manufacturers Association (USTMA)
Andersen, Dr. Stephen and Hillbrand, Alexander (Feb. 5, 2018)	Institute for Governance and Sustainable Development (IGSD) and Natural Resources Defense Council (NRDC)
Holmes, Laurie (Feb. 5, 2018)	Motor & Equipment Manufacturers Association (MEMA)
Brezny, Rasto (Feb. 5, 2018)	Manufacturers of Emission Controls Association (MECA)

The following individuals submitted written comments at the public hearing:

Commenter	Affiliation
Barrett, Will	American Lung Association (ALA)
Kolodji, Brian	Citizen (Kolodji)
Wulff, Steve	SmartTruck Systems, LLC (SmartTruck)
Miller, Paul	Northeast States for Coordinated Air Use Management (NESCAUM)

Henderson, Alice, Murphy Erin, White, V. John, Gutierrez, Irene, and Anair, Don	Environmental Defense Fund (EDF), Center for Energy Efficiency and Renewable Technologies (CEERT), Natural Resources Defense Council (NRDC), and Union of Concerned Scientists (UCS)
Khan, Siddiq	American Council for an Energy-Efficient Economy (ACEEE)

The following individuals, listed in the order in which they spoke, provided oral testimony at the public hearing:

Commenter	Affiliation
Kolodji, Brian	Kolodji
Kanabay, Kate	Autocar
Taddonio, Kristen	IGSD
Geller, Michael	MECA
Schuchard, Ryan	CALSTART
Blubaugh, Timothy	EMA
Miller, Paul	NESCAUM
Holmes-Gen, Bonnie	ALA
Henderson, Alice	EDF
Tunnell, Michael	ATA
Douglas, Steven	Alliance
Caldwell, John	Public Policy Advocates (CalETC)
Edgar, Sean	CleanFleets.net (CleanFleets)
Magavern, Bill	Coalition for Clean Air (CCA)
Nagrani, Urvi	Motiv Power Systems (Motiv)

Overall Support

1. Comment: CARB received comments of general support of the proposal. (CTA, ATA, USTMA, IGSD, NRDC, MEMA, MECA, ALA, SmartTruck, ACEEE, CALSTART, CalETC, and CCA)

   NESCAUM is in strong support of staff's proposal, expresses their gratitude for CARB's longstanding environmental leadership, and looks forward to our continued work together. "As you know, seven of our eight states have for years been partners with ARB in regulating light-duty vehicles, with great success…In fact, at no time have the federal vehicle requirements been strengthened without California first paving the way." (NESCAUM)

   "We strongly support ARB's proposal to adopt these important environmental and public health safeguards…These comments will specifically address the following:

   1. These standards are necessary in light of significant and growing transportation sector emissions and associated harms in California;

2. California's leadership and legal authority to adopt protective vehicle emission standards has reaped great benefits for the state and for the nation as a whole…

Adoption of the Heavy-Duty Phase 2 Standards will be pivotal in reducing these emissions and mitigating these negative impacts." (EDF, NRDC, CEERT, and UCS)

Agency Response: We appreciate the commenters' support and acknowledgement of our leadership and work to protect public health and mitigate the impacts of climate change on the environment by reducing emissions from vehicles.

Terminology

2. Comment: XTRA Lease is concerned that a company that leases but does not manufacture trailers, like XTRA Lease, would be considered a trailer manufacturer, and thus be subject to the California Phase 2 requirements for trailer manufacturers. XTRA Lease proposed clarifying modifications to the definition of "manufacturer" in Title 17 CCR, section 96662(a)(11). (XTRA Lease)

   Agency Response: No change was made in response to this comment. The changes that XTRA Lease proposed to the definition of "manufacturer" are unnecessary because trailer lessors are clearly not manufacturers. A manufacturer is an entity that "otherwise introduces a new motor vehicle into commerce in California." A motor vehicle is new if its legal or equitable title has not transferred to an ultimate purchaser (defined as the first person who purchases a vehicle for purposes other than resale (e.g., a trailer dealer). In this case, a trailer lessor must first purchase a new trailer before it can lease those trailers out – so as soon as title to the trailer transfers, the trailer is no longer a new vehicle, and therefore XTRA Lease is not considered a manufacturer when it leases trailers to trailer fleets.

3. Comment: "As the state and federal agencies expand their regulation of emissions coming from heavy duty vehicles through the use of aerodynamic devices, we believe it would be beneficial to standardize the terminology we use to define, categorize, and regulate aerodynamic devices and concepts." Therefore, SmartTruck recommends incorporating the "SAE Surface Vehicle Recommended Practice J2971: Truck and Bus Aerodynamic Device and Concept Terminology" for both Phase 2 and the Tractor-Trailer GHG Regulation. (SmartTruck)

   Agency Response: No change was made in response to this comment. The Tractor-Trailer GHG Regulation was first adopted in 2008 and SAE J2971 was first published in 2013. The terminology use in the proposed regulation has become accepted and well understood amongst the regulated entities, and the incorporation of SAE J2971 could create unnecessary confusion, as well as misalignment with the federal regulation.

Not including "deemed to comply" provisions

4. Comment: "ALA appreciates that the California Phase 2 proposal would ensure certification verification and enforcement by CARB to ensure compliance with the California Rules. By maintaining strong, state-specific documentation, verification

and enforcement, the proposal increases likelihood that clean air and climate benefits are truly experienced by all Californians." (ALA)

"We support ARB's proposal to independently verify certification information submitted by manufacturers, opting *not* to include "deemed to comply" provisions..." (EDF, CEERT, NRDC, and UCS)

Agency Response: We appreciate the commenters' support on the proposed no "deemed to comply" certification approach.

5. Comment: "Allison certainly respects CARB's ability to independently verify that vehicles and engines meet state GHG standards. … Collecting additional information and imposing additional certification requirements has several impacts, the first being the additional cost and delay that could result from processing two separate applications for the same engine/vehicle." They also suggest some expedited certification options. (Allison)

"CARB rule should not increase the administrative burdens by eliminating deemed to comply option." (Navistar)

Although Alliance understands the concerns expressed in the staff report regarding "deemed to comply" provision, they prefer to keep such provision in Phase 2 certification. "…the costs to industry, ARB, and EPA, of having separate regulations and separate certification processes far outweigh any benefits of creating separate requirements…" (Alliance)

"We strongly recommend that CARB utilize the established "deemed to comply" certification approach that is working well for GHG Phase 1… They stand ready to work together with CARB to streamline the process." (EMA)

Agency Response: No change was made in response to these comments. California's active role in certifying engines, vehicles, and trailers is critical to ensure the benefits of the California Phase 2 GHG program especially given the recent change in federal administration, the subsequent call to defund programs to combat climate change and to substantially reduce U.S. EPA staffing levels, and the lack of willingness by senior federal government officials to acknowledge climate change as a problem, as explained in the ISOR. We recognize manufacturers' concerns regarding increasing certification costs and the potential for delays. To address these concerns, as stated in the ISOR, we are looking at future rulemakings and whether there are ways to streamline upfront certification further, both for Phase 2 certification and more broadly for certification in general. For example, there is a potential that manufacturers could opt into an expedited certification option in which CARB staff agree to streamline upfront review in exchange for manufacturers providing additional in-use data.

Including "built as described" language in the certification application

6. Comment: EMA has concerns regarding the proposed language that vehicles "are built as described" to be required in the certification application. (EMA)

Agency Response: No change was made in response to this comment. As mentioned in the staff report, manufacturers would need to unconditionally certify that the information submitted in certification packages is accurate, and that it describes engines and vehicles as built. This additional assurance of accuracy would provide us greater confidence that submitted information accurately reflects engine and vehicle designs and test results, which would enable us to more expeditiously process and issue certification executive orders.

Emission Control Identifiers (ECI) on vehicle label

7. Comment: ACEEE supports CARB's proposal to require tractors and vocational vehicles to include ECIs on their labels to facilitate visual inspection. (ACEEE)

   Agency Response: We appreciate the commenter's support on the proposed vehicle labeling requirements.

8. Comment: "CARB is proposing a unique requirement for manufacturers to print emission control identifiers (ECIs) on a vehicle's emission control label. …we appreciate CARB listening to our concerns and proposing to require only those ECIs that are most likely to assist enforcement." (EMA)

   Agency Response: We appreciate EMA's willingness to include ECIs in the vehicle labels that would be identifiable during a vehicle inspection for tractors and vocational vehicles. Having the ECIs on the label is a simple and effective way of verifying that in-use Phase 2 vehicles are in their original certified configuration.

Engine family reporting

9. Comment: "CARB also proposes to deviate from the EPA rule by requiring manufacturers to report the engine family associated with each Vehicle Identification Number (VIN). …it is one that truck manufacturers are willing to undertake in the spirit of collaboration." (EMA)

   Agency Response: We appreciate EMA's commitment to include engine family information used in each certified vehicle in the vehicle's end-of-year report. The proposed engine family requirement would allow us to cross-reference vehicle information to engine family to improve inventory and enforcement.

Detailed reporting of A/C system information requirements

10. Comment: "CARB's usage of SAE J-2727 to assure compliance with the leak rate standard is commendable, as are the documentation requirements in the 'Proposed Phase 2 Greenhouse Gas Amendments to California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles'. The summary table, A/C system schematics, and the J2727 spreadsheets will give staff the information they need to be confident that vehicle manufacturers are meeting or exceeding targets, so that California can accurately count these reductions toward its GHG targets. The flexibility CARB built into the proposal to reduce the workload for vehicle manufacturers complying with these documentation requirements, such as the low-volume exception, is reasonable and shows concern for industry." (IGSD and NRDC)

Agency Response: We appreciate the commenters' support on the proposed detailed A/C system information reporting requirements.

11. Comment: "The Proposed HDV GHG Phase 2 test procedures require manufacturers to comply with the federal air conditioning leakage standard in subparagraph (h) of 40 CFR §86-1819-14 and 40 CFR §1037-115 even if the vehicle uses a refrigerant with a Global Warming Potential (GWP) of less than 150. This differs from the federal requirements, which do not require a leakage report for refrigerants with a GWP of less than 150.

    We recommend ARB follow the federal requirements in this area. The nominal GHG emissions associated with low-GWP refrigerant leakage simply does not justify the additional reporting required.

    Nonetheless, if ARB goes forward with the requirement, it should clarify that manufacturers must comply with the federal air conditioning leakage standard in subparagraph (h) of either 40 CFR §86-1819-14 and 40 CFR §1037-115 only for that portion of the system installed by that manufacturer. For example, some manufacturers produce a "prep-package" version of vehicles with air conditioning for the cab, but connections that allow a rear air conditioning unit installed by a secondary manufacturer (e.g., recreational vehicle manufacturer). The original manufacturer would be responsible only for the air conditioning leakage of the prep-package. The secondary manufacturer would be responsible for the leakage of the complete air conditioning." (Alliance)

    Agency Response: The commenter incorrectly describes the federal A/C leakage requirements. In fact, the federal Phase 2 rule applies the same A/C leakage standards to all refrigerants, regardless of the GWP, although the federal Phase 2 rule does not require detailed A/C reporting. The CARB Phase 2 rule adopts the same leakage standards. Although CARB Phase 2 rule requires more detailed reporting of A/C system specifications, it exempts from those California-specific reporting requirements systems using refrigerants with a GWP of 150 or less.

    No change was made in response to this comment. None of the CARB proposed changes are intended to change obligations of the responsible party with respect to certification.

12. Comment: "The GHG Phase 2 Proposal includes a long and complicated set of air-conditioning (A/C) system information ... in addition to the existing reporting requirements in the federal rule, and therefore represents a significant deviation from alignment and the goal of a nationwide standard. Because the proposed new A/C system schematics that would be required do not otherwise exist, they will require manufacturers to expend a great deal of engineering resources to create them... Missing from CARB's conclusory justification, however, is data on any significant leakage of A/C systems from medium- or heavy-duty vehicles. Nor does CARB even suggest how the newly created schematics might reduce refrigerant leakage.

...what the ISOR fails to mention is that any refrigerant leakage would create an unhappy customer and a warranty repair for which the manufacturer would have to pay. Accordingly, manufacturers already are directly and indirectly financially incentivized to minimize A/C refrigerant leakage.

Additionally, CARB's proposed A/C system schematics would create a new set of required certification documentation, and the proposed rule would establish complicated new requirements for establishing the worst-case A/C configurations. However, the additional certification documentation would not provide any information that would help CARB predict which systems may leak in the field. Instead, they will require A/C engineers, who would otherwise be designing actual improvements to A/C systems, to devise schematics solely for a certification application to CARB. Those new schematics would only add to the mountain of certification data that CARB staff may interrogate, and that predictably will lead to delayed EOs. More importantly, there is no known scenario whereby the proposed A/C system schematics could lead to a reduction in refrigerant leakage in the field, and CARB does not so much as suggest in the proposed rule how the new information might provide such a benefit.

CARB should honor the parties' commitment to alignment (a commitment that CARB itself used as leverage to convince EPA to change the federal Phase 2 rule) and eliminate the make-work A/C system information reporting requirements. If CARB insists on demanding additional A/C system information, it should at least allow manufacturers to use good engineering judgment to determine their worst-case configurations and when a unique schematic is needed. In that case, CARB should drop the criteria that it proposes to utilize to supplant the good engineering judgement of the manufacturer's technical experts." (EMA)

Agency Response: CARB's proposed detailed A/C system information requirements do not change the fact that its A/C leakage standards are the same as those in the federal Phase 2 rule. By adopting the federal Phase 2 A/C leakage standards, CARB confirms the importance of reducing refrigerant leakage via regulatory requirements that the federal Phase 2 rule established. The purpose of the California-specific A/C leakage reporting requirements, as explained in the ISOR, is to provide adequate information that would allow CARB to effectively certify the A/C systems to the leakage standards. This is critical to the realization of the GHG emission reduction benefits that the A/C leakage standards intend to bring about.

As explained in the ISOR, the schematics and the SAE J2727 spreadsheets would provide the basic topological and numeric specifications necessary to aid CARB in verifying the refrigerant leakage calculation, an important task to ensure certification rigor. Also as explained in the ISOR, "engineering judgment" can only be reliably used to select a "worst-case" scenario A/C configuration when a group of configurations are substantially similar; therefore, well-defined criteria for using a "worst-case" configuration to represent a group of configurations is necessary.

CARB staff has worked with EMA and other stakeholders to reduce manufacturers' reporting workload. In the 45-day notice version of the regulation, we incorporated fewer restrictions for the "worst-case" configuration designation compared with a previous, preliminary, proposal, and included a lower sales volume threshold for the California reporting requirements to be effective. In the 15-day notice version of the regulation, to further ease the burden on manufacturers, we developed a three-model year phase-in mechanism for the schematics requirement.

Low-GWP Credits

13. Comment: "IGSD and NRDC applaud the inclusion of incentives for manufacturers to use refrigerants with low global warming potentials (GWPs) for heavy-duty vehicles. CARB rightly observes that low-GWP refrigerants have been widely used in the light-duty sector, and that opportunities exist to adopt low-GWP refrigerants in medium- and heavy-duty vehicles as well. CARB will also want to work with industry in the transition to next-generation refrigerants to simultaneously reduce mobile air conditioning (MAC) fuel use." (IGSD and NRDC)

    Agency Response: We appreciate the commenters' support on the proposed low-GWP credits. We recognize the importance of motor vehicle A/C system efficiency, and will continue working with stakeholders to promote system efficiency improvements.

14. Comment: "MEMA strongly supports the CARB proposal to provide incentives for vehicle manufacturers to use motor vehicle air conditioning (A/C) refrigerants with low GWP…Given the poor adoption rate of these low-GWP refrigerants in the medium- and heavy-duty sector which are in part due to lack of any federal Phase 2 requirement or credit incentive, MEMA agrees that incentives are needed to push heavy-duty vehicle manufacturer movement toward broader adoption." (MEMA)

    Agency Response: We appreciate the commenter's support on the proposed low-GWP credits.

Transit bus custom chassis provision

15. Comment: ACEEE supports CARB's proposed special provisions for California-certified transit buses. (ACEEE)

    Agency Response: We appreciate the commenter's support on the proposed special provisions for transit buses.

16. Comment: "...CARB should continue to allow for an ability to certify transit buses utilizing a simplified version of the Greenhouse Gas Emission Model ("GEM") where GEM inputs are fixed to default values. See 40 C.F.R. 1037.520; 81 Fed. Reg. 73,478, 73,537 (Oct. 25, 2016). We encourage CARB to work with transit bus manufacturers to formulate solutions and methods to provide such additional flexibility prior to finalization of the proposed rule...." (Allison)

    Agency Response: Certification utilizing the simplified version of GEM for transit buses is not warranted in California because, as discussed in the ISOR, transit bus manufacturers can meet the more stringent primary standards using the full GEM

through electrification other zero-emission technology. In fact, there are currently more than 100 fuel cell and battery electric buses in operation and more than 300 fuel cell and battery electric buses on order in California. However, to ease the burden on manufacturers to run full GEM and to provide additional flexibility, the proposal contains an alternative approach.
This alternative allows a manufacturer to certify with the simplified GEM for transit buses if the manufacturer produces and delivers a certain small percentage of zero-emission GHG buses in California. This alternative approach was described in Attachment G to Resolution 18-2 and in the "Notice of Public Availability of Modified Text" that was issued for a 15-day public comment period that began on July 3, 2018 and ended on July 18, 2018.

Advanced technology credit (ATC)

17. Comment: "We support ARB's proposed adoption of the Advanced Technology Credit scheme and requirements that PHEVs show no NOx emissions and meet an increasing minimum all-electric range to receive a multiplier." (EDF, CEERT, NRDC, and UCS)

    Agency Response: We appreciate the commenters' support on the ATC proposal including the additional requirements to qualify for the PHEV multiplier.

18. Comment: Allison recommends CARB allows for additional flexibility with regard to the prohibition against oxides of nitrogen (NOx) emission increases for hybrid vehicles. Specifically, rather than completely requiring no increase in NOx emissions as a condition for generating GHG ATC multiplier, Allison comments that CARB should, on a case-by-case basis, allow manufacturers to generate ATC multiplier even in situations where small increases in NOx emissions may result if the increased NOx emissions are offset by greater fuel efficiency and less GHG emissions. (Allison)

    Agency Response: No change was made in response to this comment. Heavy-duty hybrid vehicles have the potential to emit excess NOx emissions, as can be gleaned from available technical literature, and as described further in the ISOR. Mitigating NOx emissions from diesel engines is important to air quality because NOx can undergo chemical reactions in the atmosphere leading to formation of PM2.5 and ozone. Major sources of diesel emissions include ships, trains, and trucks operating in and around ports, rail yards, and heavily traveled roadways. Furthermore, these areas are often located near highly populated areas.

    The proposed PHEV ATC multiplier (3.5x) would be used by manufacturers to offset higher GHG emissions from dirtier vehicles. Due to CARB's desire to promote advanced technology, such as heavy-duty PHEVs, which would ultimately provide net societal benefits both in terms of reduced emissions and progress toward a zero-emission heavy-duty vehicle future, CARB is willing to forego some current GHG benefits through the allowance of ATC multipliers. However, if this is compounded by a NOx increase, in addition to the GHG credit allowance, it would clearly have a negative health impact, especially on disadvantaged communities since NOx is a local air pollutant. Furthermore, since there could be a potential trade-off between NOx and CO_2 emissions reduction (i.e., engine control strategies to reduce CO_2 emissions typically increase NOx emissions and vice versa), manufacturers trying to

reduce their engine's CO_2 output, to maximize the generation of ATC from PHEVs, could likely further increase NOx emissions from those engines, if the proposed prohibition against NOx increases is not in place. CARB is charged with protecting the public from both the harmful effects of air pollution and with developing programs and actions to fight climate change. With a large segment of California's population living in ozone non-attainment areas, including disadvantaged communities, CARB staff does not believe it is judicious to ignore the potential negative NOx impact from hybrid vehicles.

19. Comment: Navistar comments that CARB's proposed all-electric range (AER) requirement for PHEVs as a condition for earning the ATC multiplier is a change in stringency from the federal requirements by conditioning and altering the credit provisions for PHEVs. Navistar believes that the California rule should follow the federal rule. (Navistar)

    Agency Response: No change was made in response to this comment. CARB's proposal strives to align with the federal Phase 2 GHG regulation with respect to stringency, structure, and timing as much as practically feasible. However, the additional conditions, including AER and no NOx emission increase, to qualify for ATCs are included in order to preserve the air quality benefits of California's regulatory and incentive programs. The proposed requirement of requiring PHEVs to demonstrate AER has a twofold purpose: (1) to align with the requirements of CARB's incentive programs, particularly those requirements in the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) where a 35-mile AER range is required to receive funding, and (2) to support CARB's zero-emission vision for heavy-duty vehicles. Advances in energy storage technologies and electric drives would assist with the progression toward a greater level of electrification and provide synergistic benefits for zero and near-zero heavy-duty vehicle technologies.

    Heavy-duty hybrids directly benefit the advancement of innovative clean technologies and remain an important part of CARB's technology roadmap to transform the heavy-duty on-road fleet into one utilizing zero and near-zero emission technologies to meet air quality and climate change goals. We believe, given the allowance for PHEVs to generate GHG credits, which are increased by the 3.5 multiplier, to offset emissions from other vehicles not in compliance with the Phase 2 GHG emission standards, it is reasonable to require those PHEV manufacturers wanting to take advantage of the ATCs to design and produce advanced hybrids with AER capability.

20. Comment: Alliance has several comments concerning clarification issues for the proposed all-electric range requirements, including definitions, applicability, and range requirements. Alliance also suggests that any new testing requirements be coordinated with the manufacturers and both CARB and U.S. EPA. (Alliance)

    Agency Response: No change was made in response to these comments. The Alliance comments are shown individually below along with CARB responses.

    Comment 20(a): "In footnote 2, how does a manufacturer determine "typical operating time" to qualify for the Fast-Charge? Is typical operation at idle, city

driving, highway speeds, max payload, towing max load, etc.? ARB should consult with manufacturers and develop the specificity needed to provide manufacturers sufficient certainty for vehicle design, development, and certification."

Phase 2 Plug-in Hybrid Electric Vehicles All-Electric Range Requirements and ATC Multipliers			
Vehicle Model Year	AER (miles)		ATC Multiplier
	Slow-Charge[1]	Fast-Charge[2]	
2017 - 2020	0	0	1.5 (Phase 1)
2021 - 2023	10+	10+	3.5[3]
2024 - 2026	20+	15+	3.5[3]
2027+	35+	20+	3.5[3]

Notes:
[1] Slow-charge refers to Level 1 and Level 2 chargers with electrical circuit rated up to 240 volts AC, up to 80 amps, and 19.2 kilowatts.
[2] Fast-charge compatible PHEVs must: 1) be capable of charging from 15 percent state-of-charge to 85 percent state-of-charge within one-half hour (0.5hr); and 2) demonstrate that typical operating time is at least 8 times (8x) typical charging time (i.e., a vehicle must be capable of operating for 8 minutes for each minute of charge time).
[3] If the PHEV AER is less than that specified in the AER column for the respective vehicle model year, an ATC multiplier of 1.5 would be applicable if the PHEV complies only with subparagraph (k)(7)(ii)(A) of this section.

Response 20(a): Since heavy-duty PHEVs could be deployed in many diverse vocational applications, it would not be possible to have one "typical operating time" that would apply equally well for all the different vocations. The phrase "typical operating time" is intended to provide flexibility to manufacturers to propose to CARB certification staff what makes sense for their particular application.

Comment 20(b): "It is not clear if the vehicle must be slow- and fast-charge capable. We assume the minimum range is the "Slow-Charge" column, but if a vehicle is fast-charge capable, then the range shown in the "Fast-Charge" column is the minimum range."

Response 20(b): Two separate AERs are proposed, one for slow charge PHEVs and the other for fast charge PHEVs. The separate AER requirements are shown under each respective heading in the referenced table.

Comment 20(c): "The range requirements for "Slow-Charge" jump considerably between 2026 and 2027 (75% increase in minimum slow-charge range) compared to the Fast-Charge minimum range (33% increase). Is there a reason for the difference?"

Response 20(c): Based on the progress of current heavy-duty hybrid vehicles activities, CARB believes the 35-mile range is achievable by the 2027 timeframe as proposed. One of the issues is the size of the battery pack and the charging capacity associated with slow charger and fast charger. With a slow charger, where the battery could be recharged overnight when the vehicle is parked at a fleet's garage, the battery state of charge (SOC) could be brought back up to 100 percent such that the vehicle would be able to provide the designed AER on the next shift. Fast chargers are designed to quickly charge the battery to a level

that would allow the vehicle to resume operation, although not at 100 percent SOC, for a prescribed distance before requiring another fast charge. Since the battery would not be able to be fast charged to 100 percent SOC in the normal timeframe of the fast charger, the battery's capability to provide AER would be lessened.

Comment 20(d): "Finally, there has been discussion by ARB staff about new test procedures for HDV range. While we generally do not support more testing, changes to test procedures or additional testing should be closely coordinated between the manufacturers and both agencies (ARB and EPA). We are committed to working closely with ARB, EPA, other manufacturers, and other stakeholders if ARB and EPA deem new test procedures necessary. Nonetheless, new test procedures could change the values in this table – making the minimum range requirements either more difficult or less difficult to meet. ARB would need to provide sufficient lead-time and stability for any such changes."

Response 20(d): The test procedures for demonstrating no-NOx increase and AER, as specified in this regulation, are the same as those contained in the Innovative Technology Regulation (ITR), which was adopted by the CARB and became effective on October 16, 2017. These test procedures specify testing conditions, including recommended test cycles or test routes. The recommended test cycles are standard chassis dynamometer duty cycles, such as the Orange County Bus Cycle, or the transient portion of the Heavy Heavy-Duty Truck 5-Mode Cycle. CARB is aware of the possible variation in the different test cycles and is, thus, not requiring the industry to adhere to any one cycle, but allows the industry to propose a test cycle that best reflects the expected duty cycles their system will likely to see in vocational operation. CARB has also extended the number of ways PHEVs can be tested, such as allowing the use of portable emission measuring systems and powertrain testing, to reduce testing costs. CARB staff is always open to more dialogue with industry stakeholders on ways to reduce testing costs and improve data acquisition.

21. Comment: EMA and MEMA oppose CARB's GHG Phase 2 proposal requiring no increase in NOx emissions compared to an equivalent conventional vehicle as well as the proposed requirement mandating specific AERs for PHEVs. EMA is concerned that these unique requirements may create a situation where a PHEV that utilizes an ATC multiplier under the federal rule may not be able to take advantage of the same ATC multiplier in California. To take advantage of the ATC multiplier in California, manufacturers would need to produce and certify unique California-only PHEVs. Producing unique 49-state and California vehicles would significantly increase manufacturers' costs to develop and deploy PHEVs, and thereby undermine the commercial viability of that advanced technology. To maintain the fundamentally important alignment with U.S. EPA and a uniform nationwide GHG Phase 2 program, and to promote the scale required to support a national PHEV market, CARB should eliminate the additional PHEV requirements related to utilizing the ATC multiplier in California. (EMA and MEMA)

Agency Response: No change was made in response to this comment. CARB's proposal would encourage manufacturers to further develop well-integrated hybrid

technologies by requiring the PHEVs to provide specified levels of AER and to not emit excess NOx emissions compared to a similar conventional vehicle. A manufacturer will need to develop more advanced PHEVs able to satisfy those two requirements in order to generate ATCs for vehicles sold in California. As discussed in the ISOR, many areas of California still have very serious air quality challenges, including high levels of NOx emissions. Since the ATCs from PHEVs could be used to offset up to 3.5 times the higher GHG emissions from other vehicles not able to meet the Phase 2 GHG emission standards, CARB does not believe it is judicious to allow the PHEVs to potentially emit higher NOx emissions while generating those advanced technology credits. CARB recognizes that ATC could be an important factor for manufacturers to develop and manufacture increased number of PHEVs. However, in light of the aforementioned air quality issues, CARB believes that the potential for higher NOx emission levels from PHEVs should not be ignored in the pursuit of greater deployment of these vehicles.

Balancing the issues discussed above, and recognizing many benefits of PHEVs, the California Phase 2 GHG regulation approved for adoption would neither prohibit the sale of 49-state PHEVs in California, nor force any manufacturer to produce 49-state and California PHEVs. A manufacturer could still sell 49-state PHEVs in California that do not comply with the no-NOx emission increase and AER requirements, but those PHEVs would not generate ATC if they are sold in California. A manufacturer could, for example, choose to produce only 49-state PHEVs that do not meet California's no-NOx increase and AER requirements, and those PHEVs would generate federal ATCs for vehicles sold outside California; they simply would not generate ATCs for any vehicle sold in California. However, if manufacturers are willing to develop PHEVs that satisfy both the no-NOx increase and AER requirements, they would be able to generate ATCs for vehicles sold in California, as well as, by default, federal credits for PHEVs sold outside of California.

We continue to believe that the proposed no-NOx emissions increase and AER requirements are still very important in meeting both CARB's mission and vision for the heavy-duty vehicle sector. Advances in energy storage technologies and electric drives would assist with the progression toward a greater level of electrification and provide synergistic benefits for zero and near-zero heavy-duty vehicle technologies.

Heavy-duty hybrids directly benefit the advancement of innovative clean technologies and remain an important part of CARB's technology roadmap to transform the heavy-duty on-road fleet into one utilizing zero and near-zero emission technologies to meet air quality and climate change goals.

22. Comment: MECA suggests "Credit opportunities offered under the Phase 1 program should be extended in the final Phase 2 rule." MECA also suggests that CARB preserve the ability for manufacturers of hybrid electric vehicles without plug-in capability, including hybrid vehicles with 48-volt system, to receive ATCs past model year 2020. "…We urge ARB to continue to support development, optimization and testing of efficiency technology to deliver cost-effective CO_2 reductions in the out years of the Phase 2 regulation and to meet future heavy-duty GHG requirements…" (MECA)

Agency Response: No change was made in response to this comment. CARB's proposal would generally align with the federal Phase 2 GHG regulation with respect to stringency, structure, and timing. CARB's proposal includes providing credit multipliers for advanced technologies identified in the federal Phase 2 rule, including advanced technologies that received Phase 1 credit, as long as they are not widely commercially available. The federal Phase 2 GHG advanced technology credits provision was restricted to only PHEVs and not for any other types of hybrids. However, CARB's proposal also includes additional conditions to qualify for ATCs to protect the air quality benefits of California's regulatory and incentive programs as well as to support CARB's zero-emission vision for heavy-duty vehicles. If other hybrid vehicles, including hybrids with 48-volt systems, were also to be allowed to generate ATCs, as suggested by this comment, more credits would be generated to offset emissions from dirtier vehicles than if the ATCs were limited to only PHEVs. This would have an overall negative emission impact by lessening the stringency and would lead to a reduction in the effectiveness of the proposed regulation. In the context of CARB's effort to protect air quality and spearheading zero-emission heavy-duty vehicle technology, CARB staff does not believe it is defensible to relax the proposed regulation.

ATCs for advanced technology vehicles produced to meet another regulation

23. Comment: CARB should not adopt provisions impacting Phase 2 Averaging, Banking, and Trading (ABT) without adequate ability to comment. (Navistar)

The Alliance opposes the limitation on the credit multiplier associated with the production of advanced technology vehicles if the production is required by another CARB rule. The Alliance argues that the limitation on the credit multiplier results in a more stringent California rule versus the Federal standard and would hinder the development of these technologies. (Alliance)

EMA opposes the limitation on the credit multiplier associated with the production of advanced technology vehicles if the production is required by another CARB rule. The association argues that the limitation results in a more stringent rule for California than the Federal Phase 2 program violating the principal of harmonization. In addition, the change would take away a strong incentive for building advanced technology vehicles. Finally, EMA argues that the provision would violate the requirement of California's Administrative Procedure Act that proposed rulemakings clearly state the express terms of the proposed regulation. (EMA)

CalETC was initially concerned about the ATC issue however, staff's board presentation addressed their concerns. (CalETC)

CALSTART supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, ensure clean air, and combat climate change. CALSTART supports Phase 2 and withdrew any concerns based on the fact that there no longer is a limitation of the ATC multiplier. (CALSTART)

Agency Response: We understand the position of various manufacturers and stakeholders on the issue of eliminating advanced multiplier credits for vehicles

produced in response to any other CARB rule and has proposed to eliminate this language in 15-day changes in Attachment G to Resolution 18-2.

Zero-emission technologies

24. Comment: ALA supports "CARB's efforts to encourage the transition to zero emission vehicles across the transportation sector. Through strong incentives and regulatory requirements for meaningful integration of zero emission technologies as outlined in this proposal…" (ALA)

    Agency Response: We appreciate the commenter's support on zero-emission technologies**.**

25. Comment: "CalETC supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, ensure clean air, and combat climate change. CalETC has concerns regarding the certification process for transportation electrification. We recommend the following additions be made to §1037.230 and §1037.241:

    - §1037.230: add (g) *Electric Vehicles.* Tailpipe emissions of regulated pollutants from electric vehicles (as defined in §1037.801) are deemed to be zero and therefore have the same FEL for all vehicle configurations. For such vehicle families, a family is not limited to a single year as zero emissions is below the annual standard for all model years. The initial vehicle family certificate can be used as a deem-to-comply for future calendar years of the same vehicle line.

    - §1037.241: add (d) *Electric vehicles.* Tailpipe emissions of regulated pollutants from electric vehicles (as defined in §1037.801) are deemed to be zero and therefore have modeled CO2 emission rates below the applicable standards. No emissions testing is required for electric vehicles. Use good engineering judgment to apply other requirements of this part to electric vehicles. We may request documentation or systems diagrams to verify there are no alternative propulsion systems on the vehicle. To claim advanced or innovative technologies credits, manufacturers must follow annual certification per §1037.230, however such a certification is not required for introducing a vehicle into commerce." (CalETC)

    The commenter "… strongly urge the Board to consider the language that CalETC proposed…" (Motiv)

    Agency Response: No change was made in response to these comments. CARB appreciates the commenter's support on zero-emission technologies. Regarding the suggested regulatory language, it is outside the scope of the Phase 2 regulation. CARB is initiating another rulemaking dealing with Zero-Emission Powertrain certification which would be the appropriate place to address concerns regarding the certification process and procedures for these types of vehicles. This rulemaking is currently scheduled to go before the Board in December 2018. For more information, go to https://ww2.arb.ca.gov/our-work/programs/zero-emission-powertrain-certification.

26. Comment: CCA especially supports incentivizing of zero-emission buses, as there are already so many options in battery electric and fuel cell electric buses. CCA also referenced Senator Florez's article on zero-emission buses where Senator Florez stated that California's foot-dragging on electric buses is "beyond egregious" (Dean Florez, January 26, 2018, LA Times, http://www.latimes.com/opinion/op-ed/la-oe-florez-electric-bus-20180126-story.html. (CCA)

    Agency Response: We appreciate the commenter's support on zero-emission buses.

27. Comment: Motiv is a provider of zero-emission technology and finds that the current requirements for certification in California put a barrier to the development and proliferation of zero-emission technologies and vehicles. (Motiv)

    Agency Response: No change was made in response to this comment. The certification process for zero-emission vehicles and the process by which those vehicles are tested and approved for sale in the state is not within the scope of the Phase 2 regulation. As noted above, CARB is initiating another rulemaking dealing with Zero-Emission Powertrain certification which would be the appropriate place to address concerns regarding certification process and procedures for these types of vehicles.

Consumer window labels

28. Comment: ACEEE supports CARB's proposal to require Class 2b and 3 PUVs to display an Environmental Performance label showing how the vehicle compares to other PUVs in terms of GHG emissions and emissions of smog precursors. ACEEE also supports the reference online material that would help consumers compare PUV ratings with information on the federal light-duty fuel economy label. (ACEEE)

    Agency Response: We appreciate the commenter's support on the proposed consumer window label requirements.

29. Comment: "…While we do not believe this label is necessary because heavy-duty customers tend to base their purchase decisions on costs, capability, and durability rather than environmental considerations, we have worked closely with ARB Staff on this for the past year, and appreciate the changes made to streamline and clarify the requirements and label." (Alliance)

    Agency Response: As stated in the ISOR, having window labels would give buyers of these vehicles better information to consider when purchasing new vehicles. It would also increase the likelihood that more efficient, lower GHG emitting vehicles required by the Phase 2 standards would be embraced by consumers. The Alliance's specific comments are shown individually below along with CARB responses.

    Comment 29(a): "Nonetheless, there are several changes still worth considering:

    Worst Case GHG Rating (Section 4.(a)): … We believe the intent is to provide the consumer the most accurate GHG rating based on the test data and/or calculated GHG emissions…

"Worst-Case" means the complete vehicle sub-configuration (40 CFR86.1819-14(d)(12)(ii), as last amended October 25, 2016) within each test group, as defined in title 40, CFR section 86.1803.01, as last amended October 25, 2016, which is incorporated by reference herein, that generates the highest combined CO_2 value as calculated above. Optionally, a manufacturer may choose to sub-divide the test group into label groups, with each label group having its own worst-case sub-configuration that generates the highest combined CO_2 values."

Response 29(a): As part of the board hearing presentation on February 8, 2018, along with Attachment G to Resolution 18-2, and the proposed 15-day notice, CARB addressed Alliance's written comments on "worst case GHG rating" and revised the "worst case" definition. With regards to the label groups, CARB agrees that an option to subdivide test groups into label groups is needed for a more representative and competitive GHG ratings. Hence, this label group option is also included in the proposed 15-day notice.

Comment 29(b): "Using A-J Letters for Smog and GHG Score: …We appreciate that ARB staff is trying to prevent confusion with the light-duty vehicle (LDV) Smog and GHG scores (which are numbers, 1-10). However, on the whole, we believe consumers will find the letters more confusing than numbers, and thus, recommend ARB revise this requirement to use numbers and provide appropriate caveats to distinguish a MDV from a LDV.

Using A+-D Letters for Smog and GHG Score: More recently, ARB staff is considering assigning school letter grades (A+ to D)… We are concerned that consumers will view this letter grade as an endorsement by CARB of the product (e.g., "The California Air Resources Board gives this vehicle an 'A'!") based on either function or quality. This is particularly troubling when paired with the "Best" on the left-hand side. If ARB moves forward with this more recent proposal, we recommend replacing "Best" with "Cleaner."…

Response 29(b): CARB staff understands that manufacturers prefer to use number rating (1-10) and provide appropriate caveat to distinguish a medium- (Class 2b) to light-duty (Class 2a). However, given that the California consumer window label looks similar to the federal Fuel Economy and Environment label, we believe that using numbers would still allow inappropriate comparisons between Classes 2a and 2b vehicles; hence, the new consumer label as proposed would still have letter ratings. As part of the board hearing presentation on February 8, 2018, along with Attachment G to Resolution 18-2, CARB addressed Alliance's written comments on "using A-J letters for smog and GHG score," and "using A+ to D letters for smog and GHG score." The proposed modifications include revised ratings from letter ratings (A to J) to letter grade rating (A+ to D), replaced the word "Best" with "Cleaner", and placed the cleaner vehicle (A+ rating) on the left side of the slider bar.

Comment 29(c): Prohibition against the sale and registration: The proposed Environmental Performance Label regulations "prohibit the "The sale and registration in this state of any California certified new 2021 and subsequent model year medium-duty vehicles…" "The manufacturers will apply the appropriate label to

vehicles delivered for sale in California. However, as currently worded, the regulation could unintentionally prohibit activities. For example:

- If a customer purchased a vehicle out of state, would this prohibit the buyer from registering it in California without a label?

- If a dealer did a cross border vehicle swap (because the customer wanted a white vehicle instead of the identical red vehicle), does the regulation prohibit the dealer from making this trade without putting a label on the vehicle?

Again, we do not believe it is ARB's intent to prohibit these activities. While we do not anticipate widespread problems, we nonetheless recommend revising section 1.(a) to read:

> "1. Prohibition
>
> (a) The ~~sale and registration~~delivery for sale in this state of any California certified new 2021 and subsequent model year medium-duty vehicles…"

"

Response 29(c): No change was made in response to the written comment on prohibition against the sale and registration because these labeling requirements only apply to medium-duty vehicles (Classes 2b and 3) that are certified for sale in California.

Sales limits for "specialty" heavy-duty vehicle types

30. Comment: The federal Phase 2 GHG regulation provides for an exemption for certain specialty vehicles by allowing those vehicles to use "non-compliant engines" but limits the annual production of those vehicles to 200 vehicles per manufacturer. CARB staff initially considered a California-based specialty vehicle sales limit of 25 vehicles per manufacturer per year for vehicles sold in California, akin to the federal requirements. The rationale for the 25 vehicle per manufacturer per year limit would have been to prevent the disproportionate sales of exempted federal specialty vehicles into California. The 25 vehicle per manufacturer per year limit concept was presented at workshops for comments. Ultimately, however, CARB staff concluded that existing California regulation (Title 13, CCR, section 1956.8(f)(1)) provides better safeguard against this possible scenario than the initial staff's concept that was workshopped. Section 1956.8(f)(1) allows for the sales of a total of 100 vehicles per year that are powered by engines that meet the federal emission standards into California when the Executive Officer has determined that no engine certified to meet California emission standards exists which is suitable for use in those vehicles.

    Unimog is a manufacturer of specialty vehicles powered by off-road engines that could be used in both on-road and off-road applications, e.g., firefighting trucks, brush and weed maintenance vehicles operating along roadways and highways, etc.) Unimog vehicles are eligible for the federal Phase 2 GHG specialty vehicle exemption.

Unimog comments that the language in Title 13, CCR, section 1956.8(f)(1) does not refer to "non-compliant engine", but only as "engines that meet the federal emission standards," as a conditional criterion for the 100-vehicle sales exemption, as stated in the staff ISOR's discussion on the sales exemption allowed under 1956.8(f)(1). Further, Unimog contends that staff's interpretation of the annual number of vehicles exempted per this section (100 vehicles for all manufacturers combined) is incorrect since it "is outside the traditional means of how manufacturer sales volumes is normally regulated". From the foregoing premises, Unimog requests that staff reconsider the "unusual interpretation of vehicle limits cited in section 1956.8(f) to apply to each manufacturer", instead of applying to all manufacturers combined. Alternatively, Unimog requests that the California Phase 2 GHG regulation provide for a California-specific sales exemption, as originally workshopped, of no more than 25 heavy-duty specialty vehicles per year for speed-limited, amphibious and certain all-terrain vehicles using federal alternate emission standards provisions in 40 CFR 1037.605. (Unimog)

Agency Response: No change was made in response to this comment. Unimog's request for a California-specific sales limit was based on a CARB staff draft concept discussed at a California Phase 2 public workshop prior to the ISOR publication, which would have included a California annual sales limit of 25 specialty vehicles per year per manufacturer in place of the federal nationwide exemption of 200 specialty vehicles per year per manufacturer. As recognized in Unimog's comment letter, CARB's intent for the specialty vehicle exemption limit concept was to guard against the sales into California of a disproportionate share of the 200 federally-exempted vehicles per year. However, in the published ISOR, CARB did not propose a California-specific sales limit of 25 vehicles as CARB believes the existing provision in Title 13, CCR, section 1956.8(f)(1) already guards against the excessive sales of on-road heavy-duty vehicles equipped with engines that are non-compliant with California regulations for on-road heavy-duty vehicles.

The federal specialty vehicle sales exemption is allowed for certain heavy-duty specialty vehicles (amphibious vehicles, speed-limited vehicles, and all-terrain vehicles with portal axles) if there are no on-road certified engines that are available for those vehicles and the engines used in those vehicles are compliant with the federal alternate emission standards specified in 40 CFR 1037.605. The federal alternate emission standards are essentially the standards for heavy-duty non-road engines plus two additional requirements on particulate matter (PM) family emission limit (0.020 g/kW-hr) and, for diesel-fueled engines using selective catalytic reduction, an nitrous oxide (N_2O) emission standard (0.1 g/kW-hr). Section 40 CFR 1037.605 notes that "although these alternate emission standards are mostly equivalent to standards that apply for non-road engines under 40 CFR part 1039 or 1048, they are specific to motor vehicles."

Title 13, CCR, section 1956.8(f)(1) states, in its entirety, "In 1985 and future years, the executive officer may authorize use of engines certified to meet federal emission standards, or which are demonstrated to meet appropriate federal emission standards, in up to a total of 100 heavy-duty vehicles, including otto-cycle and diesel heavy-duty vehicles, in any one calendar year when the executive officer has determined that no engine certified to meet California emission standards exists

which is suitable for use in the vehicles." For context, this section describes California's regulations pertaining to the sales of heavy-duty engines in California. It provides for an annual sales exemption for situations where "no engine certified to meet California emission standards exists which is suitable for use in the vehicles." Since California and federal emission standards do not always align, scenarios may exist where an engine is compliant with the federal emission standards but not California emission standards.

Such is the case here with engines certified to the federal Phase 2 GHG alternate emission standards, which, as discussed previously, are essentially non-road engine emission standards with some additional requirements for PM family emission limit and N_2O emission standards. Since California regulations do not allow non-road engines to be installed in heavy-duty vehicles, such engines would be deemed non-compliant engines if they are installed in vehicles for sale in California. In this particular instance, "non-compliant" refers to engines not complying with California's regulations but are otherwise compliant federal engines. Hence, although section 1956.8(f)(1) does not explicitly refer to "non-compliant engines", the intent of that section is to allow for a limited number of engines that do not meet California's emission standards to be sold in the state. Insofar as engines certified to the federally-allowed alternate emission standards fall into this category of engines not meeting California's regulations, the applicability of section 1956.8(f)(1) extends to specialty vehicles installed with such engines, including the total annual sales limit of 100 vehicles.

CARB's initial concept of providing a California-specific sales limit for specialty vehicles was put forth for discussion during the public workshop process due to the desire to align with the federal provisions. However, CARB determines that existing State law, i.e., Title 13, CCR, 1956.8(f)(1), already provides for a mechanism for handling these unique situations. Further, due to California's air quality situation, CARB does not believe it is prudent to allow another set of exemptions that would reduce the overall effectiveness of CARB's effort to improve the air quality of the state. Hence, the final proposal does not contain the California-specific sales limit concept.

Another major point Unimog raises in its comments was that the language of section 1956.8(f)(1) "does not state anything about the 100 heavy-duty vehicles being 'for all manufacturers combined on a fist come, first served basis', nor does it state 'other vehicle manufacturers' as if referring to manufacturers in the plural." Essentially, Unimog contends that CARB's interpretation of the sales limit sets forth in section 1956.8(f)(1) of 100 vehicles as the total yearly allowance for all manufacturers combined is incorrect, and, thus, presumably, neither the 100 total vehicles per year for all manufacturers nor the first-come, first served statement has legal standing and, therefore, are invalid. It is true that the actual language of section 1956.8(f)(1) does not explicitly contain the phrases CARB employs in its ISOR discussion. However, CARB's discussion in the ISOR was written in non-legal language intended to provide additional explanations of the codified requirements to assist the public in further understanding of those requirements. As such, CARB's discussion would necessarily contain words and phrases that may not mirror the exact statutory language. Such use of non-legal, descriptive language, does not in itself invalidate

CARB's discussion nor does it alter the intent of statutory requirements, as further expounded below.

Section 1956.8(f)(1), once again in its entirety (emphasis added), states "In 1985 and future years, the executive officer may authorize use of *engines certified to meet federal emission standards*, or which are demonstrated to meet appropriate federal emission standards, in *up to a total of 100 heavy-duty vehicles*, including otto-cycle and diesel heavy-duty vehicles, *in any one calendar year* when the executive officer has determined that no engine certified to meet California emission standards exists which is suitable for use in the vehicles." The language of this section is clear that it applies to engines meeting the federal alternate emission standard via the phrase "engines certified to meet federal emission standards." The language clearly states that the total maximum of 100 heavy-duty vehicles with non-compliant engines will be allowed to be sold in California, regardless of the number of manufacturers, since it does not specifically state that the 100 vehicles are the limit for each manufacturer. Further, since section 1956.8(f)(1) also does not state the selection criteria for the 100 vehicles, CARB has elected to use the first-come, first-served approach, as the most practical and equitable approach, in implementing this section.

NOx

31. Comment: CTA and ATA request the Board to direct staff to quantify and include the additional NOx reductions which will result from the GHG standards in state and regional emissions inventories. (CTA and ATA)

    Agency Response: No change was made in response to this comment. CARB agrees that it is important to have accurate accounting of the emission benefits resulting from any regulatory activity to properly assess strategies and develop future programs to improve California's air quality. CARB believes the California Phase 2 GHG amendments may prevent an increase in NOx emissions through the provisions for PHEV credits and emission standards and other requirements for heavy-duty glider vehicles, glider engines, and glider kits. However, CARB is not claiming any NOx emission benefits as a result of the California Phase 2 GHG amendments. The reason is that while the California Phase 2 GHG amendments aimed at preventing NOx increases may indeed prevent NOx increases, they would not necessarily decrease NOx emissions.

Natural Gas

32. Comment: MECA suggests CARB to include limitations to upstream methane emissions from natural gas vehicles in Phase 2. (MECA)

    Agency Response: No change was made in response to this comment. The federal Phase 2 GHG regulation is a vehicle tailpipe emission standard, which does not include any limitations on methane emissions associated with upstream emissions. Including upstream emissions into vehicular GHG emission standards would be outside the statutory authority of that regulatory effort. CARB also faces similar issues governing the scope of the proposed GHG emission standards for vehicles and, hence, has decided to fully align with the federal requirements for the vehicle tailpipe GHG emission standards. CARB shares MECA's concerns and recognizes methane as an important GHG that should be reduced to the maximum extent feasible due to its high GWP. As GHG emissions from vehicles continue to ratchet

down through adoption of ever more stringent emission standards, other sources of GHG emissions, such as fugitive methane leaks from onboard fuel storage and upstream sources, need to be scrutinized for further reduction. This will be accomplished through CARB's ongoing and future activities, separate from this rulemaking effort.

California's anti-tampering provision

33. Comment: "The ISOR at page III-33 states: "These products are not approved by CARB to reduce emissions, but have an anti-tampering waiver to be used as a replacement or add-on part." In fact, the anti-tampering waiver is required for "modified and add-on parts," not replacement parts. We believe CARB mistakenly stated the law and request CARB clarify this statement in its final statement of reasons." (Alliance)

    Agency Response: California's anti-tampering provisions, as stated in the California Vehicle Code, sections 27156 and 38391, prohibit altering or modifying the original design or performance of the vehicle pollution control device or system. As correctly noted by the commenter, the anti-tampering waiver is for modified or add-on parts that are determined to not cause an emission increase, and not for replacement parts. However, this correction of the aforementioned text does not change the conclusion reached on page III-33 of the ISOR regarding maintaining California's anti-tampering provisions in the Phase 2 GHG proposal rather than adopting comparable U.S. EPA provisions, since California's provisions are more stringent and more protective.

Tractors and trailers

34. Comment: ACEEE strongly supports CARB's proposal to align California's Phase 2 GHG standards for tractors above 26,000 pounds gross vehicle weight rating (GVWR) (Class 7 and 8 tractors) with the federal Phase 2 program. ACEEE also supports California Phase 2 GHG standards for trailers and amendments to the California Tractor-Trailer GHG Regulation. (ACEEE)

    Agency Response: We appreciate the commenter's support on the proposed tractor and trailer standards.

35. Comment: "We support ARB's proposed adoption of the federal trailer standards and amendments to the California Tractor-Trailer GHG regulation. …If EPA moves forward with its reconsideration and ultimately repeals the trailer standards, we support ARB's plans to make up the foregone emissions reductions from trailers by increased on-road enforcement and by promulgating future amendments to the Tractor-Trailer GHG regulation." (EDF, CEERT, NRDC, and UCS)

    CARB also received comments of support on the alignment of California Phase 2 GHG standards for trailers with the federal Phase 2 standards finalized in October 2016. (MEMA and CCA)

    Agency Response: We appreciate the commenters' support on the proposed Phase 2 trailer standards and amendments to our existing Tractor-Trailer GHG regulation.

Gliders vehicles, glider engines, and glider kits

36. Comment: CARB received supportive comments on CARB's proposal of glider requirements to align with the final federal Phase 2 regulation adopted by U.S. EPA on October 25, 2016. (Alliance, MEMA, MECA, ALA, NESCAUM, and CCA)

    ACEEE supports "ARB's proposed adoption of the federal emission requirements for glider vehicles, glider engines, and glider kits." ACEEE also supports ARB's proposed approach "if the U.S. EPA should prevail in its efforts to repeal the glider requirements, ARB would reevaluate the associated emissions increases to determine the best course of action necessary to attain California's air quality commitments and to protect the health of its residents." (ACEEE)

    Agency Response: We appreciate the commenters' support of the proposed glider requirements.

37. Comment: "We support ARB's proposed adoption of the federal emission requirements for glider vehicles, glider engines, and glider kits... We encourage ARB to implement an effective program to prevent high-emitting glider vehicles that are not in compliance with the Truck and Bus Rule from operating in California… Additionally, we encourage ARB to implement the proposed vehicle labeling and VIN engine reporting requirements to facilitate the enforcement of emission standards as to glider vehicles." (EDF, CEERT, NRDC, and UCS)

    Agency Response: We appreciate the commenters' support on the proposed glider requirements. The ISOR on pages ES-10 and II-4 states "if the U.S. EPA should prevail in its efforts to repeal the glider requirements, CARB staff intends to reevaluate the associated emissions increases to determine the best course of action necessary to attain California's air quality commitments and to protect the health of its residents." We will continue to work with industry to propose future enforcement changes relating to gliders as necessary.

    As part of its efforts to protect the public from high-emitting glider vehicles, on July 19, 2018, CARB in partnership with 16 other states filed a lawsuit against the U.S. EPA for suspending for one year enforcement of the Phase 2 glider requirements that caps the production of high-emitting glider vehicles to 300 units per year. U.S. EPA's "No Action Assurance" suspending federal enforcement of the glider requirements was released via a memorandum on July 16, 2018. Because of the lawsuits filed by California and partner states and separate lawsuits filed by environmental groups, on July 26, 2018, the U.S EPA withdrew its "No Action Assurance" stating that the application of the current requirements to the glider industry does not represent the kind of extremely unusual circumstances that support the U.S. EPA's exercise of enforcement discretion. In the coming months, CARB in partnership with other states, environmental groups, and the heavy-duty industry will continue to urge U.S. EPA to withdraw the proposed repeal and continue to enforce Phase 2 glider provisions.

    In the federal regulations, the Phase 2 glider requirements are contained in 40 CFR section 1037.635. In particular, 40 CFR subsection 1037.635(a) states that glider vehicles are subject to Subpart B of Part 1037, which pertains to emission standards, and vehicle labeling and other requirements, and 40 CFR subsection

1037.635(e)(2) states that manufacturers producing glider vehicles must comply with the reporting and recordkeeping requirements in section 1037.250. When the Board approved the California Phase 2 GHG regulation, 40 CFR section 1037.635 was incorporated into the California vehicle test procedures, which means that the federal glider requirements in 40 CFR 1037.635 would be applicable in California. Additionally, this section was amended to include a California provision that engines used in gliders must be 2010 and newer model years, which is consistent with the Truck and Bus Rule. Additionally, as mentioned by the commenter, the California provision for vehicle manufacturers, including those producing gliders, to report VINs was also added to 40 CFR section 1037.250 in the amended vehicle test procedures.

Credits/Compliance Schedule

38. Comment: "...Autocar is requesting technical changes to the Proposed Regulations which will (1) ensure that credits generated by small business in Phase 1 do not expire before they can be used in Phase 2, (2) prevent large manufacturers from gaining a competitive advantage over their small competitors, and (3) incent the continued promotion of clean-burning CNG-fueled vehicles by companies like Autocar. The technical changes preserve the policy and objectives reflected by the Proposed Regulations, in a manner consistent with provisions for other similarly-situated vocational vehicles, while providing a challenging, yet reasonable, path for compliance by small businesses that were exempt in Phase 1...

    The technical amendments would likely be codified as follows:

    a. In §1037.150(y) (Transition to Phase 2 standards.), add to subsection (1) or add a new subsection (4) as follows: "For vocational, emission credits generated by a small manufacturer in model years 2018 through 2022 may be used through model year 2027, instead of being limited to a five-year credit life as specified in §1037.740(c)."

    This first amendment rectifies a conflict created by the interim provisions, where the small business opts in to Phase 1 and begins generating credits, but those credits expire (after five years) before they can be used in Phase 2. The amendment extends the credit life through 2027. This accommodation is already provided for Light HDV and Medium HDV (in subsection (1) under §1037.150(y)), so EPA staff was comfortable applying it for small businesses as well. The amendment also protects against potential market fluctuations in the purchase of CNG trucks which are out of the manufacturer's control.

    b. In §1037.150(c) (Provisions for small manufacturers.), add the language in bold in the following sentence: "Qualifying small manufacturers are not subject to the greenhouse gas standards of §§ 1037.105 and 1037.106 for vehicles with a date of manufacture before January 1, 2022, **or before January 1, 2023, in the case of qualifying small manufacturers that certify their entire U.S.-directed production volume before January 1, 2022.**"

    This second amendment addresses a concern for potential fluctuations in sales of CNG trucks during Phase 1. In the event Autocar's sales of CNG trucks decreased

meaningfully, it would generate fewer credits under the interim provisions and potentially still be significantly behind its competitors in credits when Phase 2 began. The amendment provides an additional year for small businesses to comply under Phase 2, provided they opt in to Phase 1 no later than model year 2022. The final rule already provided for a one-year deferral, so EPA staff was comfortable with providing for a two-year deferral, for small business who voluntarily comply early. ..." (Autocar)

Agency Response: No change was made in response to this comment. The requested delayed Phase 2 compliance date of an additional year and extended Phase 1 credit life through 2027 for small manufacturers would make California Phase 2 regulation more lenient than federal standards as these requested flexibilities are currently not included in the federal Phase 2 regulation, and the Phase 2 standards are important in meeting our ambitious GHG targets of 40 percent below 1990 levels by 2030. Longer use of credits may reduce the efficacy of the program and may delay technology development progress. In addition, the federal and California Phase 2 regulations already provide optional less stringent custom chassis standards for heavy heavy-duty custom chassis categories (e.g., coach bus, solid waste collection vehicles, concrete mixer, etc.), and we believe small manufacturers (including AutoCar) can meet such standards without the need of extended credit life. However, we understand the concern and may consider amending the California Phase 2 regulation with the requested flexibilities in a separate rulemaking process if U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) later decide to include such amendments in the federal Phase 2 regulation.

39. Comment: "...So our group is proud to represent the folks that operate the majority of trash trucks, dump trucks, and concrete pumps here in the State of California. So just to zero in on the issue you heard from Kate Kanabay relative to small volume severe service vocational truck manufacturers. There's some accommodation that I think is needed for those, because this is a team sport.

Ultimately, the fleet owner, who's impacted by your fleet rules and who's also being provided some incentives to modernize has got to make decisions. And having a fair playing field for OEMs to participate in, where the truck manufacturers are able to continue to offer products that comply with the phase 2. So the small volume manufacturers, you heard from them, that some accommodation would be needed. And so we'd appreciate you considering those as you work toward finalizing the package before you, specifically that Autocar Truck comments that are before you. Just to zero in on one reason close to home why that's important.

So the Zero Waste L.A. recent franchising of commercial waste in Los Angeles, put out over 400 natural -- new natural trucks, many of those with clean near zero emission engines in them. And about half of those trucks happen to be Autocar, half of the trucks were other folks. But the point is there that the cleanest technology just to tie it in, Mr. Corey was talking about your Sustainable Freight Strategy and how important it is that the cleanest available technology for the near future and maybe Tesla other manufacturers two, three, four, five years out may have a severe service truck available, but for the refuse collection

companies that still operate about 7,000 diesel vehicles in the State, for over 20,000 diesel dump trucks in the State, for over 400 diesel concrete pumps in the State, if you're going to allow cleanest technology to be built in, in terms of the engine technology, the manufacturing of the base vehicle itself, we know that they're not that amenable to the aerodynamics and other things that are required of the phase 2 regulations.

So once again making accommodation for them will be really important to allow the users of those vehicles who can roll-out some of the cleanest engines to be able to have a vibrant competitive marketplace available to them, regardless of the size of the manufacturer..." (CleanFleets)

Agency Response: No change was made in response to this comment. As discussed in the agency response to Autocar's comment above, CARB may consider amending the California Phase 2 regulation with the requested flexibilities in a separate rulemaking process if U.S. EPA and NHTSA later decide to include such amendments in the federal Phase 2 regulation.

Regarding the comment on the inapplicability of using aerodynamics technology on solid waste collection vehicles and concrete pumps, the Phase 2 standards for vocational vehicles were not predicated on the use of aerodynamics technology. In addition, those custom vehicles can be certified under the less stringent custom chassis standards that were derived based on a much simpler applicable suite of technologies. Specifically, solid waste collection vehicle's custom chassis standards were based on the use of workday idle reduction, tire pressure system, and low rolling resistant tire technologies; meanwhile, concrete mixer's custom chassis standards were only based on the use of low rolling resistance tires.

Cost

40. Comment: "... 3) CTA and ATA request the Board to carefully evaluate the impacts additional state costs attributed to this proposal, plus upcoming proposals, will have on new truck purchases within the state...

One contributing factor is the state's unique in-use truck standards which have required fleets to purchase new or newer trucks ahead of normal turnover cycles. The cost of accelerating truck purchases to meet the state's deadlines has stretched financial resources and resulted in delayed purchases once the initial compliance has been met. In addition, the use of technology-forcing standards has caused trucking companies to re-evaluate their investment in new trucks that are more expensive, less reliable and require increased maintenance.

The proposed California Phase 2 regulation costs will further increase the cost of new trucks and trailers sold in California. Bear in mind that the federal Phase 2 regulation is projected to increase the price of a new Class 8 truck by more than $12,000 and a new 53-foot box trailer by roughly $1,000. While the California-only Phase 2 provisions are projected to cost California fleets an additional $53 annually, this figure assumes each of these fleets will be purchasing new trucks every year. In reality, only companies purchasing new trucks and trailers in California will bear these costs which will likely result in higher costs.

While the Board has spent a significant number of hours discussing the financial impacts of the state's Truck and Bus Rule, the combined cost of numerous regulations receives much less focus yet likely results in additional unintended consequences. Upcoming state regulatory activities focused on truck warranties, onboard diagnostics, heavy-duty inspection and maintenance practices, and lowering NOx emissions are expected to further add to the cost of purchasing and operating new trucks in California. How these combined initiatives impact fleet purchase patterns and the ability of fleets to operate newer, cleaner trucks is a real concern. ..." (CTA and ATA)

Agency Response: No change was made in response to this comment. We provided a detailed cost analysis in Appendix H, titled "Further Detail on Cost and Economic Analysis," as part of the ISOR Phase 2 package for public comments. The appendix detailed CARB's cost calculation assumptions and data sources. The estimated California Phase 2 cost, as described in the appendix, were largely based on the federal Phase 2 program cost estimates and the data we received from manufacturers. No comments from affected manufacturers were received during the public comment period regarding CARB's cost estimate. We estimated the California Phase 2 program costs using the federal Phase 2 costs as baseline (the California Phase 2 costs are due to the separate California Phase 2 certification and minor California Phase 2 distinctions). As discussed in the appendix, we estimated California Phase 2 cost per vehicle of approximately $20 to $200. The $53 cost value that was referenced in the comment above is the average annual cost for an impacted private California fleet (i.e., we divided the annual statewide costs on private fleets by the number of impacted private fleets).

Actual cost impact per fleet will vary depending on whether or not fleets will purchase Phase 2 vehicles in a certain year and how many Phase 2 vehicles will be purchased. The increased California Phase 2 costs are necessary to ensure the Phase 2 program's GHG emission benefits occur. In addition, there will be fuel savings to fleets due to the more fuel-efficient Phase 2 vehicles. The upfront cost of Phase 2 technologies result in commercially acceptable payback periods of 2 to 5 years, with a 2-year or shorter payback for most. These savings would offset the additional costs.

The commenters also requests CARB to evaluate costs on the new truck purchase requirements within the context of possible future CARB rulemaking actions. This is outside the scope of the California Phase 2 regulation cost analysis. For any future CARB rulemaking actions, the cost impacts of those future rulemaking actions will be evaluated as part of those actions – not in this rulemaking action. The California APA does not require that separate regulatory proposals generally relating to the same general subject matter or class of vehicles to be treated as shared projects, as commenters appear to assert is the case.[1] Because regulations are necessarily developed over time, to address specific issues and legislative mandates, it would be difficult

[1] *See* Govt. Code § 11346.4(a) (requiring a state agency to provide notice of a proposed action to adopt, amend, or repeal a regulation at least 45 days prior to the hearing and close of public comment period of the proposed action; Govt. Code § 11342.595 (defining "proposed action" as the regulatory action, *notice of which is submitted to the [OAL] for publication in the California Regulatory Notice Register*."

and unnecessary to analyze all potential regulations that purportedly relate in some way to a class or category of vehicles together in one document at one moment in time; the delays and complexities involved in attempting to do so, moreover, could well delay critical public health protections and climate goals mandated by the legislature.

Miscellaneous Comments

41. Comment: MECA urges CARB "to develop methodologies and policies that ensure that the real emission reduction benefits from all technologies remain through the end of life and multiple owners of vehicle. There is a large set of technologies that can significantly reduce, either directly or indirectly, mobile source emissions of CO2, N2O (as well as other NOx emissions), CH4, and black carbon. A range of powertrain technologies can be applied to both heavy-duty gasoline and diesel powertrains to help improve overall vehicle efficiencies, reduce fuel consumption, both of which can result in lower CO2 exhaust emissions. In many cases, the application and optimization of advanced emission control technologies on advanced heavy-duty powertrains can be achieved in a manner that lowers overall fuel consumption while reducing criteria emissions. Our comments focus on available engine efficiency and exhaust emission control technologies and the impacts these technologies can have on greenhouse gas and criteria emissions.… In addition, ARB should continue to control black carbon and PM emissions from existing heavy-duty engines through effective retrofit programs that implement filters on the full range of in-use engines, regardless of fuel, operating in California." (MECA)

    Agency Response: Although we agree with the commenter's suggestions/recommendations, they are outside the scope of this rulemaking.

42. Comment: USTMA would like CARB to review the petition for reconsideration filed under the federal rules that asks U.S. EPA and NHTSA to reconsider some aspects of the rules relevant to tires including lab alignment during rolling resistance testing, standards for non-box and non-aero box trailers, SAE J1025 and J2452, speed limited tires, tire pressure monitoring systems, visual telltales, and spread axle trailers. They also would like CARB to refine its regulations should U.S. EPA act on the topics relative to tires in the future. (USTMA)

    Agency Response: At this time, CARB has no plans to act unilaterally and adopt tire requirements that differ from the federal Phase 2 tire requirements. It is important that vehicle manufacturers can continue to build a single fleet of compliant vehicles for the U.S. market. However, CARB is ready to work with the federal agencies on the tire-related topics. If U.S. EPA proposes changes, we would review and consider aligning in a future rulemaking.

43. Comment: The commenter suggests the use of IMET's H-EGR retrofit kit would eliminate the need for Electric Vehicles. (IMET)

    Agency Response: Phase 2 does not require the use of electric vehicle technology to meet the requirements of the standard but rather establishes standards for CO_2 emissions based on a variety of technologies. U.S. EPA, CARB, and industry worked together to develop the standard based on a variety of technologies.

44. Comment: The commenter shares some information about their GHG (CO_2) carbon capture technology for stationary fuel fired engines. (Kolodji)

    Agency Response: Phase 2 does not affect or apply to stationary engines and only applies to medium- and heavy-duty on-road truck engines and vehicles.

45. Comment: The commenter recommends the use of intermodal goods transport facilities and regulations on agricultural tractors in an effort to reduce emissions. (Fox)

    Agency Response: We recognize the need for a coordinated strategy to reduce emissions from a variety of sources. Phase 2 is one element of an overall strategy to reduce emissions. Phase 2 will reduce CO_2 emissions by applying new engine and vehicle standards to heavy-duty on-road truck engines and vehicles.

46. Comment: Motiv reports that the email notifications for the Zero-Emission Powertrain Work Group are now going to the diesel group and this "technical glitch on the back-end of CARB's alert system" should be corrected. (Motiv)

    Agency Response: Although this comment is unrelated to the Phase 2 rulemaking, we provided this comment to appropriate staff. It is true, some minor glitches were encountered on CARB's new list service, and appropriate staff has subsequently corrected the problem.

B. 15-DAY COMMENTS AND AGENCY RESPONSES

Written comments were also received during the 15-day comment period in response to the July 3, 2018 public notice. Listed below are the organizations and individuals that provided comments during the 15-day comment period:

Commenter	Affiliation
Douglas, Steven (Jul. 18, 2018)	Alliance
Kinsey, John (Jul. 18, 2018)	Wanger Jones Helsley PC on behalf of John R. Lawson Rock & Oil, Inc. (Lawson)

1. Comment: Although the Alliance understands the concerns expressed in the staff report regarding "deemed to comply" and certification, they continue to recommend that we adopt the "deemed to comply" provision. "As noted in our previous comments, the costs to industry, ARB, and EPA of separate regulations and separate certification processes far outweigh any benefits of creating separate requirements." Alliance also recommends, "In the meantime, resist the urge to make changes to the California regulations and certification procedures that differ from the federal requirements. …For example, the California regulations contain a minimum range requirement for PHEVs receiving advance technology credit multipliers…With that said, we support the changes proposed in this 15-Day Notice, and again appreciate ARB's work on this regulation." (Alliance)

Agency Response: We appreciate the commenters' support on the proposed 15-day changes. Concerning the "deemed to comply" and PHEV's ATC, please see agency responses to 45-day comment numbers 5 and 20, respectively. Please note that this 15-day comment is beyond the scope of the 15-day notice and its proposed modifications, and thus no changes were made to the 15-day changes in response to this comment.

2. Comment: Lawson submitted comments related to the environmental analysis of the proposed rulemaking. The commenter also requests CARB to prepare a SRIA for the proposed amendments as well as comments on "The Proposed Amendments Constitute a Regulatory Taking, Particularly When Combined with the Effects of (i) Other Rulemakings and (ii) CARB's Uneven Enforcement," "Violation of Equal Protection and Due Process," and "Violation of the Dormant Commerce Clause." (Lawson)

   Agency Response: The Lawson comments are shown individually below along with CARB responses. Please note that these 15-day comments are beyond the scope of the 15-day notice and its proposed modifications, thus no changes were made to the 15-day changes in response to these comments.

   A. CARB's Proposed Action Violates CEQA
   Comment 2(a): Lawson submitted comments related to the environmental analysis of the proposed rulemaking, specifically stating that CARB has failed to comply with various laws, presumably including the CEQA, "CARB's Certified Regulatory Program Does Not Authorize a Finding of Exemption from CEQA" and "CARB Is Seeking to Piecemeal Environmental Review."

   Response 2(a): CARB disagrees with these comments. See https://www.arb.ca.gov/regact/2018/phase2/finalattachg.pdf for Attachment G: Responses to Comments on the Environmental Analysis for Proposed Amendments presented and approved at the September 27, 2018 board hearing.

   B. CARB's Proposed Action Violates APA
   Comment 2(b)(i): Lawson requests CARB to prepare a SRIA for the proposed amendments. "The cumulative impact of the proposed amendments and the numerous regulatory actions that will affect the trucking industry exceeds $50 million ... CARB also fails ... to look at the cumulative impact of the numerous rulemakings in 2018 and 2019 on California vehicle fleets." They also stated, "CARB's EIA is inadequate for the Proposed Amendments," "…direct costs incurred by engine and vehicle manufacturers due to the Proposed Amendments would be passed on to fleet owners…CARB has not provided any rationale justification for this deferential treatment."

   Response 2(b)(i): No change was made in response to these comments. A SRIA is not required for the proposed California Phase 2 regulation. A major regulation is defined in the State Administrative Manual 6600 as: "any proposed rulemaking action adopting, amending or repealing a regulation subject to review by OAL that will have an economic impact on California business enterprises and individuals in an amount exceeding fifty million dollars ($50,000,000) in any 12-month period between the date the major regulation is estimated to be filed with

the Secretary of State through 12 months after the major regulation is estimated to be fully implemented (as estimated by the agency), computed without regard to any offsetting benefits or costs that might result directly or indirectly from that adoption, amendment or repeal." The annual economic impacts of the proposed California Phase 2 regulation do not exceed $50 million, and hence a SRIA is not required.

Comment 2(b)(ii): The commenter states that the EIA's discussion of the " 'elimination of jobs within the state' … and the 'elimination of existing businesses within the state' … is incomplete" because it "ignores the fact that additional costs will be borne by California vehicle fleets" (referencing comments submitted by commenters CTA and ATA).

Response 2(b)(ii): No change was made in response to this comment. As a threshold matter, the Agency notes that this comment extends beyond the scope of this rulemaking action because it was submitted during the public comment period applicable to proposed modifications of the initially noticed rulemaking, as set forth in the notice of public availability of modified text published on July 3, 2018;[2] however, the comment is directed to the initially proposed regulatory text set forth in the "Notice of Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards For Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation", published on December 19, 2017.

Nevertheless, the Agency disagrees with the commenter's assertion. See the agency response to comment 40.

Comment 2(b)(iii): The commenter states CARB fails to comply with the APA by failing to "look at the cumulative impact of numerous [proposed future CARB rulemaking actions] on California vehicle fleets."

Response to comment 2(b)(iii): No change was made in response to this comment. As a threshold matter, the Agency notes that this comment extends beyond the scope of this rulemaking action because it was submitted during the public comment period applicable to proposed modifications of the initially noticed rulemaking, as set forth in the notice of public availability of modified text published on July 3, 2018; however, the comment is directed to the initially proposed regulatory text set forth in the "Notice of Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards For Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation", published on December 19, 2017.

[2] "Collectively, the proposed amendments to Phase 2 and the Tractor-Trailer GHG Regulation are referred to in these comments as the "Proposed Amendments," ***while the proposed modifications to Phase 2 and the Tractor-Trailer GHG Regulation identified in the 15-Day Notice are referred to as the "Proposed Modifications."*** Comments of Lawson on the Proposed Amendments to the July 3, 2018, Notice of Public Availability of Modified Text for the Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles (Phase 2) and Proposed Amendments to the Tractor-Trailer Greenhouse Gas Regulation (hereinafter Lawson letter) p.1. (Emphasis added).

Nevertheless, the Agency disagrees with the comment. See the Agency response to comment 40.

C. The Proposed Amendments Constitute a Regulatory Taking

Comment 2(c): "Responsible truckers will be required to spend millions of dollars in an attempt to comply with the Proposed Amendments, in addition to their existing compliance with other programs and regulations. CARB admits Phase 2 benefits "would allow CARB to verify and enforce the Phase 2 regulatory standards," only ***"potentially leading to higher levels of compliance, which would ensure the program's GHG emission benefits occur."*** (Staff Report at ES-5, ES-6 [emphasis added].) In other words, CARB is essentially saying that while there is only a possibility that Phase 2 would lead to higher levels of compliance, it certifies that emissions benefits will occur. This is wholly contradictory. There is no ascertainable public benefit associated with the Proposed Amendments, particularly viewed in the context of the ambivalence of the Proposed Amendments and combined with CARB's failure to evenly enforce the existing regulations.

This is particularly true in light of the fact that CARB is already imposing millions of dollars of requirements on the trucking industry through the Truck and Bus Regulation, and that CARB seeks to force industry to expend even more money comply with future amendments planned for 2018 and 2019. Making matters worse, CARB is failing to evenly enforce the regulations currently on the books, and is actively harming the responsible truckers who have dutifully complied with CARB's myriad regulations targeting the trucking industry.

CARB's actions – both with respect to the Proposed Amendments and cumulatively – result in a deprivation of private property in a manner that is arbitrary, capricious, and of no benefit to the public. This violates well-settled constitutional property rights, and results in a regulatory taking. (See *Kelo v. City of New London, Conn.* (2005) 545 U.S. 469; see also Cal. Const. art. 1, § 19.) In *Maritrans, Inc. v. United States*, 342 F.3d 1344, 1348 (Fed. Cir. 2003), the court evaluated whether vessel owners have a property interest in their vessels after the Oil Pollution Act of 1990 ("OPA90") required all single hull tank vessels used in the transport of oil that existing at the time of OPA90's enactment, to "be retrofitted with double hulls in order to qualify for operation on the navigable waters or the United States." Although the court found that a 13.1% decline in value was "not enough of a diminution in value to indicate that Maritrans was carrying an undue portion of the burden created" by OPA90, the court found that owners of tank vessels had a property interest in their vessels. (*Id.* at 1358.) Like the vessel owners in *Maritrans*, California vehicle fleet owners have a reasonable, investment-backed expectation that the State would not require responsible truckers to spend millions of dollars to comply with the Proposed Amendments and regulations, or if they did, that the regulations would be evenly enforced against the entire industry. The cumulative effect of the Proposed Amendments combined with the other regulations and programs has created an untenable situation for California vehicle fleet owners, certainly resulting in a greater decline in value than 13.1%. (See *Avenida San Juan Partnership v. City of San Clemente* (2011) 201 Cal.App.4th 1256, 1267 [recognizing the well-

established principle that selective enforcement through spot zoning is irrational discrimination in the land use context].)"

Response 2(c): No change was made in response to this comment. As a threshold matter, the Agency notes that this comment extends beyond the scope of this rulemaking action because it was submitted during the public comment period applicable to proposed modifications of the initially noticed rulemaking, as set forth in the notice of public availability of modified text published on July 3, 2018;[3] however, the comment is directed to the initially proposed regulatory text set forth in the "Notice of Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards For Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation", published on December 19, 2017.

Nevertheless, the Agency disagrees with the commenter's assertion that "[t]here is no ascertainable public benefit associated with the Proposed Amendments, particularly viewed in the context of the ambivalence if the Proposed Amendments and combined with CARB's failure to evenly enforce the existing regulations."[4] First, that assertion is contradicted by the rulemaking record that demonstrates the California Phase 2 program will reduce 5.1 million metric tons of carbon dioxide emissions in California (compared to the existing California GHG regulations for heavy-duty vehicles and engines) in 2030, and 11.4 million metric tons of carbon dioxide emissions in California (compared to the existing California GHG regulations for heavy-duty vehicles and engines) in 2050. *See* discussion of projected emissions benefits of the rulemaking action in ES-5, Section IV, and Appendix F of the Staff Report. Second, the commenter's assertion is based on misrepresenting one provision of the rulemaking by citing one sentence of the Executive Summary of the Staff Report out of context. Specifically, the commenter only cites to the italicized portions of the following sentence in the Executive Summary:

> "The proposed California Phase 2 regulation *would allow CARB to verify and enforce the Phase 2 regulatory standards, thereby potentially leading to higher levels of compliance, which would ensure the program's GHG emission benefits occur*."[5]

That sentence discusses a provision of the rulemaking action that eliminated a preexisting option that allowed manufacturers to demonstrate that their vehicles and engines complied with California requirements by demonstrating that U.S.

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[3] "Collectively, the proposed amendments to Phase 2 and the Tractor-Trailer GHG Regulation are referred to in these comments as the "Proposed Amendments," ***while the proposed modifications to Phase 2 and the Tractor-Trailer GHG Regulation identified in the 15-Day Notice are referred to as the "Proposed Modifications."*** Comments of Lawson on the Proposed Amendments to the July 3, 2018, Notice of Public Availability of Modified Text for the Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles (Phase 2) and Proposed Amendments to the Tractor-Trailer Greenhouse Gas Regulation (hereinafter Lawson letter) p.1. (Emphasis added).

[4] Lawson letter, p. 8.

[5] Staff Report, ES-5, ES-6.

EPA had already issued a Certificate of Conformity for such vehicles and engines.[6] The subject provision accordingly now requires manufacturers to

> "unconditionally certify that the information submitted in certification packages is accurate, and that it describes the engines and vehicles as built. This additional assurance of accuracy would provide CARB staff greater confidence that the submitted information accurately reflects engine and vehicle designs and test results, which should enable CARB to more expeditiously process and issue executive orders."

Staff Report, II-13

When viewed in this broader context, it is clear that the subject provision, rather than casting doubt on the benefits of the rulemaking action, instead provides a greater degree of certainty that the rulemaking will indeed generate the projected reductions of GHGs attributable to this rulemaking action. The commenter's assertion that "[t]here is no ascertainable public benefit associated with the Proposed Amendments, particularly viewed in the context of the ambivalence of the Proposed Amendments and combined with CARB's failure to evenly enforce the existing regulations therefore lacks merit. The provision unequivocally requires manufacturers to certify future heavy-duty engines and vehicles with CARB, and the commenter has neither provided nor cited any evidence that CARB has failed to enforce existing certification requirements.

The commenter instead generally alleges that CARB is failing to enforce the California Truck and Bus regulation, but those assertions are also not true. Specifically, CARB vigorously enforces its diesel truck program requirements. Since 2011, CARB has successfully closed 1,015 fleet investigations and assessed more than $22 million in penalties for violations of CARB diesel rules. Over this same period, CARB also issued 27,413 citations and collected more than $11 million in penalties for violations of diesel program requirements on individual vehicles. CARB's 2017 Annual Enforcement Report is publicly available, and provides detailed information about the Board's diesel enforcement activities. For instance, in 2017, CARB closed 132 diesel fleet investigations and assessed $3,249,907 in penalties. CARB also issued 3,963 citations and collected $1,222,314 in penalties.

Additionally, while the commenter claims that truckers will have to spend "millions of dollars in an attempt to comply with the Proposed Amendments", that claim is incorrect because this rulemaking primarily establishes GHG emission requirements applicable to manufacturers of 2021 and subsequent model year medium- and heavy-duty engines and vehicles and 2020 and subsequent model year trailers – not to end users. Provisions of the rulemaking do establish options that allow owners of specified box-type trailers to comply with California's Tractor-Trailer GHG regulation by purchasing Phase 2 certified trailers or by installing Phase 2 aerodynamic technologies and low rolling resistance tires that are components of Phase 2 certified trailer configurations, but those options only

[6] Staff Report, I-9, II-5, III-12 and III-13.

provide owners additional compliance flexibility, and do not impose new regulatory obligations on owners.

The Agency disagrees with the commenter's assertion that this rulemaking action constitutes a regulatory taking of commenter's private property rights. As a threshold matter, the Agency notes that the commenter has not clearly specified which of its property rights are allegedly infringed by this rulemaking action, and is therefore providing this response under the assumption that the commenter is alleging that this rulemaking is impairing its property rights associated with its existing fleet of heavy-duty vehicles.

The "Takings Clause" of the Fifth Amendment to the United States Constitution prohibits the federal government from taking private property for public use, without just compensation. This prohibition extends to states by the Fourteenth Amendment to the United States Constitution.[7]

Governmental regulatory actions that require an owner to suffer permanent physical invasions of his or her property, or that completely deprive an owner of all economically beneficial use of his or her property will generally will be deemed *per se* takings for Fifth Amendment purposes. *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 538 (2005).

Courts evaluate whether regulatory actions that extend beyond the above-mentioned categories and the special context of land-use exactions constitute regulatory takings using the standards set forth in *Penn Central Transp. Co. v. New York City, 438 U.S. 104 (1978)* (*Penn Central*). In that case, the United States Supreme Court identified factors that courts must consider in evaluating whether a regulatory taking has occurred, including the regulation's economic impact on the claimant, "the extent to which the regulation has interfered with distinct investment-backed expectations", *Lingle,* 544 U.S. 528, 539 (*quoting* 438 U.S. 104, 124), and the character of the governmental action – *i.e.*, "whether it amounts to a physical invasion or instead merely affects property interests through "some public program adjusting the benefits and burdens of economic life to promote the common good." 544 U.S. 528, 539 (*quoting* 438 U.S. 104, 124). The *Lingle* court further stated that each of the above mentioned inquiries "aims to identify regulatory actions that are functionally equivalent to the classic taking in which government directly appropriates private property or ousts the owner from his domain. Accordingly, each of these tests focuses directly upon the severity of the burden that government imposes upon private property rights." 544 U.S. 528, 539.

In accordance with the above mentioned Supreme Court decisions, it is clear that this rulemaking action cannot be considered a regulatory taking of the commenter's property rights. This rulemaking does not effect a *per se* taking because it neither causes the commenter to suffer a permanent physical invasion of its existing heavy-duty vehicles nor completely deprives the commenter of all

[7] The Supreme Court applied the Takings Clause of the Fifth Amendment to the States through the Fourteenth Amendment Due Process Clause in *Chicago Burlington and Quincy R.R. v. City of Chicago*, 166 U.S. 226 (1897).

economically beneficial use of said vehicles. *This is readily apparent because the rulemaking primarily imposes requirements on 2020 and newer model year trailers and 2021 and newer model year medium- and heavy-duty engines and vehicles – trailers, engines, and vehicles that have have not even been produced, and do not affect the commenter's ability to operate its existing heavy-duty trucks.* To the extent the rulemaking action establishes options allowing owners of box-type trailers to comply with California's Tractor-Trailer GHG regulation by purchasing Phase 2 certified trailers or by installing Phase 2 aerodynamic technologies and low rolling resistance tires that are components of Phase 2 certified trailer configurations, those options only provide additional compliance flexibility, and also do not restrict the commenter's existing ability to operate its existing vehicles.

The rulemaking action also does not rise to a regulatory taking under the *Penn Central* factors. As previously stated, the rulemaking does not and cannot adversely affect the commenter's economic interests, because it only establishes requirements applicable to future, yet-to-be produced heavy-duty vehicles and engines, and only establishes additional compliance flexibilities with respect to California's Tractor-Trailer GHG regulation. It is also clear that the commenter cannot establish that the rulemaking has interfered with its investment-based expectations for the same reason – the regulation dies not restrict the commenter's ability to operate its existing heavy-duty vehicle fleet. Finally, the character of the rulemaking action only affects the property interests of future purchasers of 2020 and newer trailers and 2021 and newer vehicles and engines, and does not deprive existing owners of their property interests associated with existing trailers, vehicles or engines.

Kelo v. City of New London, Connecticut, 545 U.S. 469 (2005) (Kelo) does not support the commenter's position that the amendments will deprive it of property in an arbitrary and capricious manner that provides no benefit to the public. Instead, the issue presented in that case was whether a city's plan to acquire real property via eminent domain, and then transfer that property to other private owners who would develop that property to implement a redevelopment plan, qualified as a "public use" within the meaning of the Takings Clause of the Fifth Amendment to the Constitution. 545 U.S. 469, 472, 477. The *Kelo* court stated "our public use jurisprudence has wisely eschewed rigid formulas and intrusive scrutiny in favor of affording legislatures broad latitude in determining what public needs justify the use of the takings power" 545 U.S. 469, 483, determined that the city formulated its development plan with the intent to obtain "appreciable benefits to the community", including new jobs and increased taxes, and accordingly held that because that plan clearly served a public purpose, the challenged takings met the public use requirement of the Fifth Amendment. 545 U.S. 469, 484. The *Kelo* court expressly stated that its holding did not preclude states from imposing public use restrictions that are more stringent than the federal baseline, and noted that California statutes only allow cities to take land for redevelopment in blighted areas.[8]

[8] Cal. Health & Safety Code Ann. §§ 33030–33037.

The commenter also cites to § 19, art. 1 of the California Constitution, which states that "State and local governments are prohibited from acquiring by eminent domain an owner-occupied residence for the purpose of conveying it to a private person." This citation is not relevant to this rulemaking action as it does establish any requirement pertaining to acquisition of property by eminent domain.

The commenter maintains that *Maritrans, Inc. v. United States, 342 F.3d 1344 (Fed. Cir. 2003) (Maritrans)* supports its position that courts have held that owners of existing personal property have cognizable property interests in that property under the Takings Clause of the U.S. Constitution, and also maintains that although the court in that case determined that a 13.1% diminution in value of value was not a sufficiently great diminution of value under the "economic impact" factor set forth in *Penn Centra*l, in this case the rulemaking will "certainly result[ ] in a greater decline in value than 13.1%.[9]

In *Maritrans*, an owner of single hull tank vessels sought compensation from the U.S. government, alleging that the enactment of a federal statute requiring existing single hull tank barges to be retrofitted with double hulls in order to operate on navigable waters or waters subject to the U.S. Exclusive Economic Zone (Oil Pollution Act of 1990, OP90) constituted a taking of private property requiring compensation pursuant to the Takings Clause of the U.S. Constitution. The Court of Federal Claims held that with respect to eight vessels (comprising vessels that had been retrofitted with double hulls, sold, or involved in a collision leading to receipt of insurance proceeds)[10], the OP90 neither resulted in a categorical nor a regulatory taking of the vessels requiring the government to compensate the owner.[11] On appeal, the U.S. Court of Appeals for the Federal Circuit affirmed.

The *Maritrans* court first found that the owner had cognizable property interests in its existing tank barges,[12] but determined that the OP90 did not effect a categorical taking because OP90 merely limited the owner's preexisting right to use the vessels but did not deprive the owner of "100% of the beneficial uses of its barges."[13] The Maritrans court noted that Congress provided owners the option to retrofit vessels to allow the continued use of such vessels, and noted that "[a]lthough this option imposes substantial costs, [owner] has not established that retrofitting is not viable for any of its vessels. The fact that [owner's] return on its investment may now be less than it originally expected is not enough to make Congress' enactment of OP90 a compensable taking."[14]

The *Maritrans* court then determined that OP90 did not effect a regulatory taking. The court first found that the character of the governmental action underlying adoption of the OP90 was to implement a permissible goal of preventing oil spills

[9] Lawson letter, pp. 8-9.
[10] *Maritrans*, 342 F.3d 1344, 1349 (Fed. Cir. 2003)
[11] *Id*. at 1350
[12] *Id.* at 1353
[13] Id. at 1354
[14] Id. at 1354-1355.

in navigable waters that would result in damaging pollution,[15] and that the owner was not the sole company subject to OP90. Rather, OP90 "applied uniformly across the oil transport industry."[16]

The court then assessed the economic impact of OP90 on the owner, noted that the Court of Federal Claims' found that OP90 caused the fair market value of the subject vessels to decline 13.1%, and stated that the owner failed to show that the lower court's findings were clearly erroneous.[17]

The court affirmed the Court of Federal Claims' finding that the owner did establish that it had a reasonable, investment backed expectation (when it purchased the vessels) that the vessels would be free from the regulatory conditions of OP90. This finding was based on testimony from Coast Guard officials indicating it had no plans to require single hull vessels to retrofit to double hulls.[18] However, the court noted that factor was not sufficient to overturn the Court of Federal Claims' other two above findings that supported the holding that OP90 did not effect a regulatory taking of the eight vessels at issue.[19]

Assuming, arguendo, that commenter has a cognizable property interest in its existing fleet of vehicles, the reasoning used by *Maritrans* court fully supports a conclusion that the regulation effects neither a categorical nor a regulatory taking. The regulation does not deprive the commenter of "100% of the beneficial uses of its vehicles, since the regulation in no way restricts the use of commenter's existing fleet of vehicles, and therefore does not effect a categorical taking.

The character of the regulation is clearly an environmental regulation intended to limit emissions of GHGs from heavy-duty vehicles, and allocates the requirements and burdens across an entire industry, rather than on a single company. Moreover, those burdens are primarily imposed on manufacturers of engines, vehicles, and trailers, rather than on end-users.

The economic impact of the regulation on the commenter is minimal, because it primarily establishes requirements on manufacturers of engines, vehicles, and trailers, rather than on end-users, and unlike the vessel owner in *Maritrans,* the commenter cannot proffer evidence that it has a reasonable investment backed expectation that new heavy-duty vehicles would not be subject to the regulation, especially when CARB had collaborated with U.S. EPA and NHTSA in developing the federal Phase 2 GHG regulation. Consequently, the reasoning used by the *Maritrans* court supports a determination that the regulation does not constitute a compensable taking.

To the extent the commenter is citing the spot zoning case *Avenida San Juan P'ship v. City of San Clemente*, 201 Cal. App. 4th 1256 (2011) (*Avenida*) to

[15] Id. at 1357.
[16] Ibid.
[17] Id. at 1358.
[18] Id. at 1358-1359.
[19] Id. at 1359.

support its proposition that the character of the government action is irrationally discriminatory, the California Phase 2 rulemaking is certainly distinguishable. In *Avenida*, the court found that the city's downzoning designation change appeared to have been motivated to keep the subject parcel as open space, while the proscribed purpose of the new zoning designation was preserving canyons.[20] Additionally, the subject parcel was surrounded by similarly situated parcels with a less restrictive zoning designation. [21] Since the rationale for the downzoning designation did not actual apply to the parcel and the parcel was designated with lesser rights than the surrounding properties, the court found the city had discriminately spot zoned.[22] After analyzing the other two main *Penn Central* factors and determining that all three were readily met, the court held that the city's action resulted in a compensable partial taking.[23] However, as previously discussed, the character of the California Phase 2 regulation is clearly an environmental regulation intended to limit emissions of GHGs from heavy-duty vehicles and the requirements and burdens are allocated across an entire industry, rather than on a single company. As a result, the spot zoning in *Avenida* is not akin to this rulemaking. Thus, the reasoning used by the *Avenida* court supports the conclusion that the California Phase 2 rulemaking is not an irrationally discriminatory government action.

D. The Proposed Amendments Violate Equal Protection and Due Process

Comment 2(d): By CARB's own admission, direct costs incurred by engine and vehicle manufacturers due to the Proposed Amendments would be passed on to fleet owners by increasing the purchase price of the vehicle. … CARB has not provided rational justification for providing this significantly deferential treatment. By effectively allowing engine and vehicle manufacturers to pass the costs of repairs to their customers, CARB places responsible compliant fleet and truck owners at a significant competitive disadvantage. The Staff Report and Proposed Modifications fail to recognize this result, let alone provide any rational justification for it. This is a violation of Lawson's equal protection and due process rights.

Response 2(d): No change was made in response to this comment. As a threshold matter, the Agency notes that a portion of this comment extends beyond the scope of this rulemaking action, because it was submitted during the public comment period applicable to proposed modifications of the initially noticed rulemaking, as set forth in the notice of public availability of modified text published on July 3, 2018;[24] however, the comment is directed to both the initially proposed regulatory text set forth in the "Notice of Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards For Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-

[20] *Avenida San Juan P'ship v. City of San Clemente*, 201 Cal. App. 4th 1256, 1273 (2011).
[21] *Id*.
[22] *Id*. at 1271; see also *Arcadia Dev. Co. v. City of Morgan Hill*, 197 Cal. App. 4th 1526, 1536 (2011) ("Even where a small island is created in the midst of less restrictive zoning, the zoning may be upheld where rational reason in the public benefit exists for such a classification.").
[23] *Id*. at 1273.
[24] "Collectively, the proposed amendments to Phase 2 and the Tractor-Trailer GHG Regulation are referred to in these comments as the "Proposed Amendments," *while the proposed modifications to Phase 2 and the Tractor-Trailer GHG Regulation identified in the 15-Day Notice are referred to as the "Proposed Modifications*." Lawson letter p.1. (Emphasis added).

Trailer GHG Regulation", published on December 19, 2017. Consequently, that portion of the comment that is not directed to the modified text published on July 3, 2018 extends beyond the scope of this rulemaking action.

Nothwithstanding this, the Agency responds as follows.

First, the commenter improperly characterizes this rulemaking action as "allowing engine and vehicle manufacturers to pass the costs of repairs to their customers …." That characterization is not accurate as the rulemaking action instead primarily establishes GHG emission requirements applicable to manufacturers of 2021 and subsequent model year medium- and heavy-duty engines and vehicles and 2020 and subsequent model year trailers – not to end users. Provisions of the rulemaking do establish options that allow owners of specified box-type trailers to comply with California's Tractor-Trailer GHG regulation by purchasing Phase 2 certified trailers or by installing Phase 2 aerodynamic technologies and low rolling resistance tires that are components of Phase 2 certified trailer configurations, but those options only provide owners additional compliance flexibility, and do not impose new regulatory obligations on owners.

While it is true that the California Phase 2 GHG regulation is anticipated to increase purchase prices of new vehicles and engines, it is also true that the regulation is anticipated to provide cost savings to owners over the life of the regulation. As explained in the California Phase 2 Economic and Fiscal Impact Statement, U.S. EPA analyses indicate that the upfront costs of Phase 2 technologies would result in commercially acceptable payback periods of 2 to 5 years, with a 2-year or shorter payback for most.[25] These fuel savings would offset the costs.

The Agency also disagrees with the assertion that this rulemaking action "violates commenter's equal protection and due process rights, as well as the rights of countless other similarly situated trucking companies."[26]

Given the general nature of this comment, it is not possible to respond with specificity. Therefore, the Agency provides the following general response.

Substantive Due Process
The Fourteenth Amendment to the United States Constitution prohibits states from depriving persons of "life, liberty, or property, without due process of law." The Fifth Amendment to the United States Constitution prohibits the federal government from depriving persons of "life, liberty, or property, without due process of law." These provisions have both procedural and substantive aspects. The substantive aspects of these due process protections ensure that the substance of challenged governmental actions are consistent with the provisions of the Constitution. The procedural aspects ensure that the government follows proper procedures in administering laws, and broadly require

[25] United States Environmental Protection Agency and Department of Transportation National Highway Traffic Safety Administration, Final Rule: Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2, October 25, 2016. https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf
[26] Lawson letter at p. 9.

that a full and fair hearing be conducted before the government acts to directly impair a person's constitutionally cognizable life, liberty, or property interests.

In analyzing substantive due process challenges to a governmental action, courts first determine whether the action affects a fundamental right (or creates a suspect class of affected persons). Fundamental rights include the protections of most of the Bill of Rights. If a fundamental right is affected, a court will determine whether the challenged law was enacted to further a compelling governmental interest, and whether the law was narrowly tailored to achieve that interest.

In this case, as stated above, due to the general nature of the comment, the Agency is unable to discern any impairment of commenter's fundamental constitutional rights. The commenter therefore has the burden of demonstrating that the regulation is not rationally related to a permissible governmental interest.

As set forth in more detail in the Staff Report, Initial Statement of Reasons for this rulemaking action, CARB primarily adopted this rulemaking action to achieve reductions in emissions of greenhouse gases (GHGs) emitted by heavy-duty diesel vehicles. The subset of heavy-duty diesel vehicles affected by this rulemaking action comprise one of the largest sources of GHGs in California. In California, heavy-duty trucks account for approximately 20 percent of carbon dioxide (CO2) emissions from the transportation sector.[27] California therefore needs to reduce GHG emissions from this sector. CARB estimates that the regulation will result in a reduction of 208 million metric tons of CO_2 equivalent emissions in California from 2019 to 2050.[28]

GHGs are the primary cause of anthropogenic climate change. Climate change adversely affects California by resulting in: reduced snowpack, more intense drought, increased wildfire intensity, and sea level rise. Furthermore, human-caused climate change threatens public health and public welfare by resulting in extreme weather events, changes in air quality, increases in food- and water-borne pathogens, and increases in temperatures are anticipated to have adverse health effects.[29]

CARB is mandated to reduce GHG emissions in California. In 2006, the Legislature passed and the Governor signed the California Global Warming Solutions Act of 2006, (Assembly Bill (AB) 32, Chap. 488, Stats. 2006 (Nunez)), AB 32. AB 32 requires CARB to enact regulations to achieve the level of statewide GHG emissions in 1990 by 2020, authorizes and directs CARB to monitor and regulate sources of GHG emissions, (California Health and Safety Code (HSC) § 38510), and specifically directs CARB to "adopt rules and regulations … to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions from sources … subject to the criteria and schedules set forth in this part". California HSC § 38560. In 2016 California's Legislature adopted, and California's Governor Brown signed Senate Bill (SB) 32 (Chap. 249, Stats. 2016 (Pavley), which requires CARB to ensure that

[27] Staff Report, ES-1
[28] Id. at ES-5
[29] Id. at II-1

California's statewide emissions of greenhouse gas emissions are reduced to at least 40 percent below the level of statewide GHG emissions in 1990, no later than December 31, 2030. California HSC § 38566. These considerations establish that the regulation serves the legitimate public purpose of protecting the health and welfare of California's residents, which purpose "clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power." *Huron Portland Cement Co.* (1960) 362 U.S. 440, 442.

The regulation is rationally related to this permissible governmental interest. As discussed above, the vehicles and engines subject to the regulation comprise one of the largest sources of GHGs in California, and must therefore be regulated to ensure their emissions of GHGs are reduced. These considerations establish that the regulation constitutes a reasonable and rational means to implement a permissible governmental interest, and consequently the regulation will not violate commenter's substantive due process rights.

Equal Protection Clause

The Equal Protection Clause of the Fourteenth Amendment to the United States Constitution provides that no state shall "deny to any person within its jurisdiction the equal protection of the laws." This same limitation applies to the federal government through the Fifth Amendment's guarantee of due process.

The Equal Protection Clause requires that the government deal with similarly situated persons in a similar manner. Governments are not precluded from classifying persons or creating distinctions in adopting and enforcing laws, as long as those classifications or distinctions are not based on impermissible criteria, or are used to impermissibly burden a group of persons. Accordingly, unless a governmentally created classification substantially burdens the exercise of a fundamental constitutional right, or classifies affected persons upon a "suspected basis" (i.e., race, national origin, gender, or illegitimacy classifications), it will be upheld as long it has a rational relationship to any legitimate governmental interest. *City of Cleburne, Tex. v. Cleburne Living Center*, 473 U.S. 432, 439-440 (1985).

In this case, the regulation imposes requirements upon manufacturers of new 2020 and subsequent model year trailers and 2021 and subsequent model year heavy-duty diesel vehicles and engines. The regulation further provides an optional compliance path for owners of in-use trailers. These classifications neither significantly burden the exercise of a fundamental constitutional right nor classifies affected persons upon a constitutionally suspected basis, and clearly has a rational relationship to a legitimate governmental interest as established above in the Agency's response above responding to the commenter's assertion that allegation that this rulemaking action violates commenter's substantive due process rights.

Procedural Due Process

As previously stated, the procedural aspects of the Fourteenth and the Fifth Amendments to the United States Constitution ensure that the government follows proper procedures in administering laws, and broadly require that a full

and fair hearing be conducted before the government acts to directly impair a person's constitutionally recognized life, liberty, or property interests.

In this case the commenter cannot validly claim that this rulemaking action violates its procedural due process rights because this rulemaking action only establishes requirements that apply to new gliders and heavy-duty vehicles and engines *that have not even been manufactured.* The commenter cannot establish that it has acquired an affected glider, vehicle or engine.

The existence of a constitutionally protected property interest is determined by reference to existing rules or understandings that stem from an independent source, such as state law. *Philips v. Wash. Legal Foundation* 524 U.S. 156, 164 (1998) quoting *Board of Regents of State Colleges v. Roth*, 408 U.S. 564, 577 (1972) (Roth). In *Roth*, the United States Supreme Court explained that the existence of property rights is dependent upon the existence of a legitimate claim of entitlement – "[t]o have a property interest in a benefit, a person clearly must have more than an abstract need or desire for it. He must have more than a unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it." 408 U.S. 564, 577. The court further explained that because the Constitution protects rather than creates property interests, the existence of a property interest is determined by reference to "existing rules or understandings that stem from an independent source such as state law." *Ibid.* The court then determined that an untenured teacher could not establish he had a property interest in continued employment, where he was hired under a fixed, one year-term contract that expressly did not provide for renewal of the contract, and consequently had no constitutional right to a hearing regarding the university's decision not to rehire him.

In this case, the commenter cannot assert that it has a legitimate claim of entitlement to a 2020 or newer trailer or a 2021 or newer model heavy-duty vehicle or engine, and consequently cannot establish a property interest that entitles it to the procedural due process protections of the Fourteenth Amendment of the United States.

Notwithstanding this, the commenter was provided a full notice of this regulatory action because CARB fully complied with the provisions of the California Administrative Procedures Act and the CEQA in promulgating the final regulation.

E. Violation of Dormant Commerce Clause

Comment 2(e): CARB's actions – both with respect to the Proposed Amendments and cumulatively – burden vehicle fleet actions in violation of the dormant Commerce Clause. The dormant Commerce Clause is violated when the burden imposed by the Proposed Amendments and cumulatively "is clearly excessive in relation to the putative local benefits." (See *Pike v. Bruce Church* (1970) 397 U.S. 137, 142.)

As stated above, and by CARB's own admission, Phase 2 would only "potentially" lead to higher levels of compliance. This uncertainty, coupled with CARB's persistent failure to evenly enforce existing regulations shows there are no ascertainable public benefits associated with the Proposed Amendments.

California vehicle fleet owners have spent millions of dollars to comply with the regulations imposed by CARB. From the Proposed Amendments, CARB staff estimates the number of impacted California vehicle fleets to be 158,000, with 87% of the impacted being small businesses. (Staff Report at VII-6). The Proposed Amendments combined with CARB's other regulations will effectively force some California Vehicle fleets out of business. Other companies will either route trucks around California and/or ship to California using only a certain portion of their fleet. The Staff Report and Proposed Modifications fail to recognize result. This constitutes a dormant Commerce Clause violation of Lawson's rights.

Response 2(e): No change was made in response to this comment. As a threshold matter, the Agency notes that a portion of this comment extends beyond the scope of this rulemaking action, because it was submitted during the public comment period applicable to proposed modifications of the initially noticed rulemaking, as set forth in the notice of public availability of modified text published on July 3, 2018[30]; however, the comment is directed to both the initially proposed regulatory text set forth in the "Notice of Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards For Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation", published on December 19, 2017, and a portion of the comment is directed to the modified text published on July 3, 2018.

Notwithstanding this, for the reasons set forth below, the Agency believes that neither the initially proposed regulation nor the proposed modifications, as set forth in the notice of public availability of modified text published on July 3, 2018, are inconsistent with the provisions of the Commerce Clause of the U.S. Constitution.

Article I, §8, cl. 3 of the United States Constitution states that Congress has the power "[t]o regulate Commerce …among the several States." Courts have long recognized that this affirmative grant of power also includes an implicit or "dormant" limitation on the authority of states to affect interstate commerce. *United Haulers Ass'n., Inc. v. Onedia-Herkimer Solid Waste Management Authority* (2007) 550 U.S. 330, 338. In determining whether a state law violates the Commerce Clause, a court first determines if the law discriminates against interstate commerce, either on its face or in practical effect (*Hughes v. Oklahoma* (1979) 441 U.S. 322, 336)), i.e., if the law accords differential treatment of instate and out-of-state economic interests that benefits the former and burdens the latter. Such a laws is virtually per se invalid. *United Haulers Ass'n* at 338, and will only survive if it "advance[s] a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives*." Oregon Waste Systems Inc. v. Department of Environmental Quality of State of Oregon* (1994) 511 U.S. 93, 100-101.

[30] "Collectively, the proposed amendments to Phase 2 and the Tractor-Trailer GHG Regulation are referred to in these comments as the "Proposed Amendments," ***while the proposed modifications to Phase 2 and the Tractor-Trailer GHG Regulation identified in the 15-Day Notice are referred to as the "Proposed Modifications." Lawson letter p.1***

Neither the Phase 2 GHG regulation nor the amendments to the Tractor-Trailer GHG regulation facially discriminate or discriminate in practice against interstate commerce, as they do not establish requirements for interstate commerce that are qualitatively or quantitatively different than the requirements for intrastate commerce. *United Hauler's Ass'n* (2007) 550 U.S. 330 involved a challenge to a "flow control" ordinance that required all solid waste in affected counties to be delivered to a state-created, public benefit corporation, and that further required private waste haulers to obtain permits to collect waste in those affected counties. The U.S. Supreme Court noted that the ordinance benefitted a public facility "*while treating all private companies exactly the same*," *id* at 342, and therefore held that the ordinance did not discriminate against interstate commerce. *Id.* at 345. The *United Haulers Ass'n* Court then proceeded to analyze the constitutionality of the ordinance under the *Pike v. Bruce Church, Inc.* test described below.

The Phase 2 GHG regulation does not facially discriminate against interstate commerce because its requirements apply to all manufacturers (whether located in California or in other states) that produce new 2020 and subsequent model year trailers or 2021 and subsequent model year heavy-duty engines and vehicles for sale in California. The Tractor-Trailer GHG regulation does not facially discriminate against interstate commerce because its requirements are applicable to all 53 foot and longer box type trailers and the long-haul on-road tractors that haul such trailers that operate in California, whether they are based in California or out-of-state.

Furthermore, neither the Phase 2 GHG regulation nor the amended Tractor-Trailer GHG regulation discriminates in practice against interstate commerce, because neither regulation establishes requirements for interstate commerce that are qualitatively or quantitatively different than the requirements for intrastate commerce. The Phase 2 GHG regulation establishes emission standards and other emission-related requirements that apply to all new 2020 and subsequent model year trailers and 2021 and subsequent model year heavy-duty engines and vehicles certified for sale in California, and the amended Tractor-Trailer GHG regulation establishes requirements that are uniformly applicable to affected tractors and trailers that operate in California, whether they are based inside or outside of California.

The U.S. Supreme Court has held, in certain situations that a state law that directly regulates commerce outside of that state's boundaries violates the Commerce Clause. This principle has been referred to as the extraterritoriality branch of the dormant Commerce Clause. In *Healy v. Beer Institute* (1989) 491 U.S. 324, the U.S. Supreme Court held that a Connecticut price affirmation statute for beer violated the Commerce Clause because it regulated out-of-state commerce by controlling prices and marketing practices in other states. Specifically, that statute effectively required interstate beer sellers to forego available promotional and volume discounts in other states, which deprived those sellers of any competitive advantages that might exist in bordering States. The *Healy* Court also found that the statute facially discriminated against interstate commerce. *Healy* (1989) 491 U.S. 324, 340.

In *Edgar v. MITE Corp.*, (1982) 457 U.S. 624, a plurality of the U.S. Supreme Court would have invalidated a statute regulating corporate takeovers on extraterritoriality grounds. The plurality found the statute would allow Illinois to regulate out-of-state transactions that had no significant connections to Illinois (i.e., the statute could be applied to regulate tender offers that would not affect a single Illinois shareholder). However, a majority of the Court ultimately invalidated the statute under the Pike balancing test discussed below. The U.S. Supreme Court has not held, however, that the extraterritoriality doctrine per se invalidates state regulations that incidentally or indirectly regulate out-of-state commerce, but has upheld a state's ability to regulate extraterritorial commerce that has a direct nexus to that state and that substantially impacts that state. In *CTS Corp. v. Dynamics Corp. of America* (1987) 481 U.S. 69, the Court upheld an Indiana corporate takeover statute against a Commerce Clause challenge. The Court distinguished that statute from the Illinois statute in *MITE* in that the Indiana statute only applied to corporations with substantial numbers of shareholders in Indiana and would therefore affect a substantial number of Indiana residents. *Id.* at 93. The Court notably did not hold that the statute was invalid simply because it could also possibly regulate out-of-state transactions (i.e., non-Indiana corporations seeking to purchase shares from non-Indiana shareholders). Federal courts of appeal have similarly rejected assertions that state regulations that only incidentally affect out-of-state transactions are per se invalidated by the extraterritorial doctrine. *Alliant Energy Corp v. Bie* (7th Cir. 2003) 336 F.3d 545, *Rocky Mountain Farmers Union v. Corey* (9th Cir. 2013) 730 F.3d 1070, 1106-1107 (9th Cir. 2013), *reh'g en banc denied*, 740 F.3d 507 (9th Cir. 2014).

Neither the Phase 2 GHG regulation nor the amended Tractor-Trailer GHG regulation raises the same issues that concerned the *Healy* and the *MITE* Courts. Unlike the price affirmation statute in *Healy*, the Phase 2 GHG regulation and the amended Tractor-Trailer GHG regulation do not practically regulate commercial activity beyond California's borders; instead, those regulations only apply to new vehicles, engines, and trailers sold and registered in California and used trailers that operate on California highways. Unlike the *MITE* statute, the subject regulations were specifically developed in order to reduce GHG emissions from the heavy-duty vehicles (including trailers) that travel on California's highways – emissions that directly affect California's economic well-being, public health, natural resources, and environment. The Phase 2 GHG regulation and the Tractor-Trailer GHG regulation are therefore more akin to the statute in *CTS* and the Fuel Standard at issue in *Rocky Mountain Farmers Union* in that they affect a substantial source of GHG emissions that California has an indisputable interest in reducing, and is therefore consistent with the extraterritoriality doctrine.

If a court determines that a state law does not discriminate against interstate commerce or directly regulate commerce outside of the state's boundaries, it then balances the law's local benefits against its burdens on interstate commerce to determine if the law violates the federal Commerce Clause. *Pike v. Bruce Church* (1970) 397 U.S. 137, 142. The Supreme Court has stated that state regulations frequently pass muster under the Pike test. *Department of Revenue of Ky. v. Davis* (2008) 533 U.S. 328, 339. Under this test, a state law will be

upheld unless it imposes a burden on interstate commerce that is clearly excessive in relation to the putative local benefits. Furthermore, courts will accord a greater presumption of validity to a state's laws in the field of safety. *Pike* 397 U.S. 137, 143.

Courts recognize that preventing air pollution is and has been a traditional local safety concern. *Huron Portland Cement Co. v. Detroit* (1960) 362 U.S. 440, 445446. This recognition is also expressed in the federal Clean Air Act section 101(a)(3), where the U.S. Congress declared that states and local governments are primarily responsible for preventing air pollution, and in California Health and Safety Code sections 39000 and 39001, wherein the California legislature declared a strong public interest in controlling air pollution to protect the "health, safety, welfare, and sense of well-being" of Californians. If a court determines that the justifications for a state safety-based regulation are not illusory, as it would likely find in this case, it will accord the regulation significant deference. *Raymond Motor Transportation v. Rice* (1978) 434 U.S. 429, 449 (Blackmun, J., concurrence). The court will then assess the regulation's burden on interstate commerce. Neither the Phase 2 GHG regulation nor the amended Tractor-Trailer GHG regulation unduly burdens interstate commerce.

The Phase 2 GHG regulation does not burden interstate commerce because it only establishes requirements applicable to new vehicles, engines, and trailers certified for sale in California. Although the Tractor-Trailer GHG regulation does apply to heavy-duty trucks that are based outside of California, it does not unduly burden interstate commerce. First, the regulation spreads the total cost of compliance for fleets over several years, which helps mitigate any financial impact on fleet owners. For instance, trailer owners had the flexibility to comply with the requirements applicable to 2010 and older trailer requirements over a period of six years. Second, the regulation will ultimately generate fuel savings that offset compliance costs. An average of 7 to 10 percent fuel savings is expected on a compliant tractor-trailer combination, which translates to approximately $4,000 to $5,700 per year on a truck with average long-haul mileage.[31] Depending on the ratio of tractors to trailers, an owner may be able to recover the initial cost in less than 1.5 years to several years. Thereafter, the owner will actually save money in fuel when operating the compliant tractor-trailer, compared to a noncompliant tractor-trailer. Third, the rulemaking records for the Tractor-Trailer GHG regulation clearly establish that the initial compliance costs for the equipment required by the GHG regulation can be justified by the miles that both California and non-California based tractors and trailers travel in the state. In fact, CARB has estimated that in 2020, non-California based tractors will contribute 65.5 percent of the total vehicle miles traveled (VMT) on California highways. *See* Appendix C to Staff Report to the original Tractor-Trailer Greenhouse Gas Regulation. Fourth, the comment presumes that every out-of-state affected tractor or trailer in the nation's fleet must install low-rolling resistance tires or aerodynamic equipment if they want to provide transportation services in California, which disregards the fact that trucking fleets utilize advanced technologies, such as global positioning systems, to track the locations

[31] Staff Report: Initial Statement of Reasons for Public Hearing to Consider Adoption of the Regulation to Reduce Greenhouse Gas Emissions From Heavy-Duty Vehicles (2008), p. ES6.

of individual trucks on a real-time basis. Trucking fleets are therefore aware of the location of each of their vehicles, and can easily direct only compliant trucks into California. Furthermore, many trucks may never enter California because of its geographic location.

These considerations demonstrate that the Tractor-Trailer GHG regulation does not impose a burden on interstate commerce that clearly exceeds its benefits of protecting the health and welfare of California's residents from global warming, and would likely be held not to unconstitutionally burden interstate commerce under the *Pike* balancing test. This conclusion also necessarily follows because a state law violates the *Pike* balancing test only if it imposes a burden on interstate commerce that is "qualitatively or quantitatively different from that imposed on intrastate commerce." *National Elec. Mfrs. Ass'n v. Sorrell* (2001) 272 F.3d 104, 109, *National Solid Waste Management Ass'n v. Pine Belt Regional Solid Waste Management Authority* (2004) 389 F.3d 491, 502. The Tractor-Trailer GHG Regulation does neither – it establishes requirements that are equally applicable to both California-based and non-California based trucks and trailers operating in the state.

V. Peer Review

Health and Safety Code section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. Specifically, the scientific basis or scientific portion of a proposed rule may be subject to this peer review process. Here, CARB determined that the rulemaking at issue does not contain a scientific basis or scientific portion subject to peer review, and thus no peer review as set forth in section 57004 needed to be performed.