Agreement

The California Air Resources Board (“CARB”), the Truck and Engine Manufacturers Association (“EMA”), and the undersigned heavy-duty on-highway (HDOH) manufacturer members of EMA (the “OEMs”) (collectively, the “Parties”) recognizing the importance of: (i) preserving and protecting the environment; (ii) ensuring current and future CARB regulations affecting new HDOH vehicles and engines will achieve significant reductions of air pollutants from such vehicles and engines; (iii) promoting the transition of the HDOH commercial vehicle industry to zero-emissions; (iv) maintaining a strong and viable industry; and (v) providing certainty and stability for the HDOH industry and its customers, do hereby agree as follows:

1. CARB staff commits to initiate the actions set forth in Appendices A, B, and C and, where required for implementation, will recommend such actions to the CARB Board for its approval. The intent of the actions set forth in Appendix A is to revise the existing compliance flexibility provisions of CARB’s Omnibus Regulation\(^1\) by raising the existing caps on legacy engines and streamlining certain other provisions without increasing emissions compared to the preexisting Omnibus Regulation. The intent of the actions set forth in Appendix B is (i) to clarify which authorities and regulations remain status quo in California, (ii) to specify which regulations are covered by the OEMs’ commitment in point 2 below, and (iii) to amend the Omnibus Regulation’s 2027 and later model year requirements to align with the United States Environmental Protection Agency’s (U.S. EPA) Clean Trucks Plan (CTP) Oxides of Nitrogen (NOx) Final Rule,\(^2\) except for certain specified exceptions, subject to separate CARB provisions and control. Appendix C also describes actions related to CARB’s Emission Warranty and Information Reporting (EWIR) program, CARB’s Advanced Clean Trucks (ACT) regulation,\(^3\) and certain other matters. In addition, Appendix C contains CARB’s commitment on implementation flexibility for automatic recalls during the 2024 to 2034 model year timeframe for the EWIR and In Use Compliance Regulations, as well as ongoing efforts on ACT and Advanced Clean Fleet (ACF) Regulations.

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2. The OEMs commit to meet, in California, the relevant provisions of the CARB regulations set forth in Appendices A and B, and any agreed upon modifications to such regulations as set forth in this Agreement, irrespective of the outcome of any litigation challenging the waivers or authorizations for those regulations or of CARB’s overall authority to implement those regulations.

3. The Parties acknowledge and recognize that some states have adopted certain of the CARB regulations set forth in Appendix B pursuant to Section 177 of the federal Clean Air Act (“177 States”) and that those or other states may act to adopt other CARB regulations set forth in Appendices A and B. The Parties have agreed as set forth in Appendix D to certain actions they mutually or separately will take with respect to current or future 177 States. The intent of the provisions set forth in Appendix D is that the Parties will work together cooperatively to resolve issues that may warrant regulatory amendments to CARB’s regulations, and that they will actively promote the infrastructure development needed to support the successful implementation of CARB’s ACT regulation. The principles set forth in Appendix D are further intended to memorialize the positions that EMA and the OEMs commit to take with respect to their advocacy in current or future 177 States.

4. EMA and the OEMs will not (i) challenge CARB’s issuance of the regulations set forth in Appendix B; (ii) file a Petition for Review or otherwise challenge any U.S. EPA waiver or authorization granted for such regulations; (iii) file amicus briefs supporting challenges to such waivers or authorizations, or such regulations; or (iv) support stay motions or similar motions practice challenging such waiver or authorization decisions, or such regulations.

5. In recognition of the OEMs desire for regulatory leadtime and stability, CARB’s Executive Officer will direct the CARB staff to propose, and recommend that the CARB Board adopt, minimum four (4) year leadtime and three (3) year stability periods for future criteria emissions regulations affecting new HDOH engines and vehicles. The Executive Officer’s direction above also will apply to CARB’s planned ACT 2 rulemaking. However, that direction will not apply to the implementation of the regulatory changes included in Appendices A and B.

6. The Parties acknowledge that it is important to implement the actions contemplated by this Agreement as soon as reasonably possible. CARB’s Executive Officer will release a Notice of Public Comment Period to Consider Proposed Amendments to the Heavy-Duty Engine and Vehicle Omnibus Regulation to amend the existing compliance flexibility provisions of the Omnibus regulation to raise legacy caps and streamline other provisions in Omnibus as described in Appendix A as soon as possible and no later than August 29, 2023. In addition, no later than sixty (60) days after signing this Agreement, CARB’s Executive Officer will advise the CARB Board of his direction to the staff regarding leadtime and stability as set forth in Section 5 above and, no later than ninety (90) days after signing this Agreement, will inform the CARB Board of the balance of the provisions set forth in this Agreement. The Parties acknowledge that all applicable provisions of California’s Administrative Procedures Act must be followed in implementing the terms of this Agreement. CARB staff will use its best efforts to commence the contemplated 2027 and later model year amendments to CARB’s Omnibus regulations, as described in Section.
1(iii) above, as soon as possible, with a workshop to be held no later than the first quarter of 2024 and a formal rulemaking notice released no later than the third quarter of 2025.

7. CARB will send a follow-up letter to the Petition for Reconsideration it filed with U.S. EPA regarding U.S. EPA’s 2027 Low NOx rule informing U.S. EPA that CARB plans to harmonize with the U.S. EPA 2027 CTP NOx rule with the exceptions noted in Appendix B. CARB will not seek additional changes to U.S. EPA’s 2027 Low NOx rule, provided the U.S. EPA does not make changes to its rule inconsistent with this Agreement.

8. The Parties acknowledge the efforts that have resulted in this Agreement and their respective commitments to follow through in implementing the Agreement.

Signature pages to follow
California Air Resources Board
By: Steven S. Cliff, Ph.D.
Title: Executive Officer
Date: July 5, 2023
Signature: 

Truck and Engine Manufacturers Association
By: Jed R. Mandel
Title: President
Date: June 28, 2023
Signature: 

Cummins Inc.
By: Shelley Knust
Title: Vice President Product Compliance and Regulatory Affairs
Date: June 28, 2023
Signature: 

Daimler Truck North America By:
Sean Waters
Title: Vice President Product Compliance
Date: June 28, 2023
Signature: Sean Waters
General Motors Company
By: Hon. David Strickland
Title: Vice President Global Regulatory Affairs
Date: June 28, 2023
Signature: 

Hino Motors Limited, Inc.
By: Takashi Katou
Title: North American Manager - Regulation and Certification Div.
Date: 6/29, 2023
Signature: Takashi Katou

Isuzu Technical Center of America, Inc.
By: Jeffery A. Marsee
Title: Exec. Dir, Vehicle Compliance
Date: 6/30/2023
Signature: 

Navistar, Inc.
By: Michael Noonan
Title: Director - Certification and Compliance
Date: 06/28/23
Signature: Michael Noonan
PACCAR Inc.
By: [Signatures]
Title: [Positions]
Date: [Dates]
Signature: [Signatures]

Stellantis N.V.
By: [Signatures]
Title: SVP, Technical Safety & Regulatory Compliance
Date: [Dates]
Signature: [Signatures]

Volvo Group North America
By: [Signatures]
Title: Vice President, Government Relations & Public Affairs
Date: [Dates]
Signature: [Signatures]
Appendix A – Amendments to Omnibus Legacy Provisions in Title 13 California Code of Regulations (CCR) 1956.8 to Ease Transition

Each manufacturer must pick one option and cannot switch between options for the 2024-2026 model year (MY) period. The denominator for all percentages shown below includes total medium-duty diesel (MDD), light heavy-duty diesel (LHDD), medium heavy-duty diesel (MHDD), and heavy heavy-duty diesel (HHDD) California distribution of engine certified products. The denominator excludes chassis certified products.

**Option 1**

Applicable to all OEMs. The following caps would apply:
45 percent\(^1\) legacy cap in 2024, 25 percent\(^1\) legacy cap in 2025, 10 percent\(^1\) legacy cap in 2026

**Option 2**

Only applicable to OEMs that make MHDD engines and heavy-duty diesel engines in another primary intended service class
MHDD – 60 percent\(^2\) legacy cap in 2024, 60 percent\(^2\) legacy cap in 2025, 0 percent legacy cap in 2026
Other service class (Total MD + LHDD + HHDD) – 15 percent\(^1\) legacy cap in 2024, 8 percent\(^1\) legacy cap in 2025, 0 percent legacy cap in 2026

To give certainty regarding what happens if legacy thresholds are exceeded, CARB has clarified the consequence if the legacy caps are exceeded, as detailed in footnotes 1 and 2.

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\(^1\) For the legacy percentage caps shown, the first number (e.g., 45 percent for Option 1 for 2024 MY) is a threshold. Deficits for legacy engine sales between 0 and the threshold of total heavy-duty diesel production volume would need to be offset at the nominal rate (i.e., 1 Mg NOx credits per 1 Mg excess NOx from a legacy engine). All deficits from sales between the threshold and 1 percent more than the threshold (e.g., between 45 and 46 percent for Option 1 for 2024 MY) would have to be offset at times the nominal rate (i.e., 4 Mg NOx credits per 1 Mg excess NOx from a legacy engine). All sales volume above 1 percent more than the threshold (e.g., above 46 percent for Option 1 for 2024 MY) would be considered as non-compliant sales.

\(^2\) For MHDD engine sales under option 2, the first number (e.g., 60 percent for 2024 MY) is a threshold. Deficits for legacy engine sales between 0 and the threshold of total heavy-duty diesel production volume would need to be offset at the nominal rate (i.e., 1 Mg NOx credits per 1 Mg excess NOx from a legacy engine). All deficits from sales between the threshold and 5 percent more than the threshold (e.g., between 60 and 65 percent for 2024 MY) would have to be offset at times the nominal rate (i.e., 4 Mg [NOx credits per 1 Mg excess NOx from a legacy engine]. All sales volume above 5 percent more than the threshold (e.g., above 65 percent for 2024 MY) would be considered as non-compliant sales. For example, a manufacturer uses option 2 and sells 100 total heavy-duty engines in 2024 MY. At the end of 2024 MY, the manufacturer determines that it has sold 70 legacy medium heavy-duty engines. The manufacturer must offset the emissions from 60 medium heavy-duty engines at the nominal rate. The manufacturer must also recall 5 medium heavy-duty engines (70-65=5).
Additional changes:

CARB commits that it will initiate rulemaking actions and present the following provisions through the public review process:

1. To extend the legacy engine provisions flexibility through 2026 MY (under option 1 only) to allow manufacturers to certify engines to the exhaust emissions standards for NOx and particulate matter (PM) specified in title 13, California Code of Regulations, section 1956.8(a)(2)(C)3, provided the manufacturers offset any NOx or PM deficits generated from this option.

2. To allow engine manufacturers in MY 2024 to certify legacy engines prior to certification of Omnibus-compliant engine families.

3. To allow manufacturers to offset any increases in NOx or PM emissions by undertaking projects targeted at California disadvantaged communities in the same model year that they utilize the proposed legacy engine provisions.

4. Manufacturers can carry over deficits from 2024 to 2025 MY and offset with HD-ZEP credits without any applicable multipliers.

CARB staff also commits to prepare the following Manufacturers Advisory Correspondence (MAC) documents in consultation with EMA and all member HDOH OEMs:

1. A MAC prescribing how to demonstrate legacy engine cap compliance (for example, via labeling data). CARB staff’s intent is to be flexible regarding de minimus accidental leakage of non-legacy engines to California.

2. A MAC with further guidance on how to pursue projects targeted at California disadvantaged communities. Such projects may include infrastructure projects aimed at facilitating use of HD ZEVs.
Appendix B – CARB Truck Regulations Compliance and U.S. EPA Clean Trucks Plan
Harmonization

CARB Carries Out Its Authority Per the Following:

1. California will maintain its certification program. That is, manufacturers will still be required to submit applications for certification including test data, certification documents, etc. to demonstrate compliance with applicable California requirements. CARB will independently evaluate whether to issue Executive Orders.

2. CARB is not committing to issue “deemed to comply certifications” based on U.S. EPA certifications.

3. CARB will maintain its On-Board Diagnostic (OBD) program, and manufacturers will need to meet CARB OBD requirements in order to be certified in California.

4. CARB will maintain its EWIR program but will implement the clarifications outlined in Appendix C of this agreement.

5. CARB will maintain its heavy-duty in-use compliance program for both diesel and Otto-cycle engines, including in-use testing conducted by manufacturers and in-use testing conducted by CARB. CARB will maintain its authority for all the elements pertaining to heavy-duty in-use requirements as described in the Omnibus regulation; however, CARB proposes to adopt the 2-Bin Moving Average Window (2B-MAW) Methodology, and the off-cycle standards and in-use duty cycle standards as shown below. In addition, as mentioned in Appendix C, CARB will use its discretion to not do automatic recalls at the required trigger points for the 2024-2034 model year engines but will take into consideration the newness of the technology and information submitted by manufacturers before making recall decisions, as well as U.S. EPA’s recall decisions. CARB will also evaluate during the alignment rulemaking if it is warranted to align certain aspects, or holistically, to the U.S. EPA’s In Use Compliance program.

6. CARB will maintain its mandatory Clean Idle Label requirement for California-certified engines but will propose to align with U.S. EPA’s 10 grams per hour standard level.

The OEMs Commit to Meet CARB Truck Regulations

The OEMs commit to meet, in California, the requirements of the relevant regulations as specified below and any agreed upon modifications per this Agreement, regardless of the outcome of any litigation challenging the waivers/authorizations for those regulations, or CARB’s overall authority to implement those regulations.

1. The Omnibus regulation,¹ as it existed on December 22, 2021, and the Standards and Test

¹ The Omnibus regulation is comprised of new title 13, California Code of Regulations (Cal. Code Regs.) sections 2139.5, and 2169.1 through 2169.8; amendments to title 13, Cal. Code Regs., sections 1900, 1956.8, 1961.2, 1965, 1968.2, 1971.1, 1971.5, 2035, 2036, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2121, 2123, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2133, 2137, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2166, 2166.1, 2167, 2168, 2169, 2170, 2423, and 2485; and amendments to title 17 Cal. Code Regs. sections 95662 and
procedures incorporated in the Omnibus regulation, as they existed on December 22, 2021. As specified above, CARB commits to initiate actions resulting in future amendments to the Omnibus regulation. Assuming those amendments are finalized, the OEMs agree to fully comply in California with the requirements of the Omnibus regulation and any standards and test procedures incorporated in the Omnibus regulation, as affected by such amendments.

2. The ACT regulation,² as it existed on March 15, 2021, and the 100 percent ZEV sales requirement set forth in Cal. Code Regs title 13, section 2016, as it existed on April 28, 2023. As specified above, CARB commits to initiate actions resulting in future amendments to the ACT regulation. Once those amendments are finalized, the OEMs agree to fully comply in California with the requirements of the ACT regulation and any standards and test procedures incorporated in the ACT regulation, as affected by such amendments.


4. The Zero Emission Powertrain Certification Procedure,⁴ as it existed on January 21, 2020, and the Standards and Test procedures incorporated in the Zero Emission Powertrain Certification Procedure, as they existed on January 21, 2020, and

5. The 2018 HD Warranty Amendments,⁵ as they existed on June 12, 2019, and the Standards and Test Procedures for 2004 and subsequent model year Heavy-Duty Diesel Engines and Vehicles, as amended April 18, 2019.

CARB Omnibus/U.S. EPA Clean Trucks Alignment and Exceptions

1. Revisions to the Temperature Adjustment & Compliance Allowance

As described in further detail below, CARB proposes to incorporate a modified version of the temperature adjustment function and the interim compliance allowance for a limited period of time.

95663.


³ The Zero Emission Airport Shuttle regulation is comprised of new sections 95690.1, 95690.2, 95690.3, 95690.4, 95690.5, 95690.6, 95690.7, and 95690.8, title 17, Cal. Code Regs.


⁵ The 2018 HD Warranty Amendments are comprised of amendments to title 13, California Code of Regulations (Cal. Code Regs.) sections 1956.8, 2035, 2036, and 2040.
A. **Interim Compliance Allowance**

CARB will propose to amend the Omnibus Regulation to include the following interim compliance allowance schedule:

- 15 mg/hp-hr applicable to MHDD and HHDD for MYs 2027-2034
- No interim compliance allowance for 2035 and subsequent MYs

The proposed interim compliance allowance would apply to both in-use duty cycle NOx emissions standards (FTP/RMC/LLC) as well as off-cycle NOx emissions standards.

B. **Temperature Adjustment**

For MYs 2027 to 2030, the in-use off-cycle standards for bins 1 and 2 would remain constant at temperatures above 20 ºC. The proposed temperature adjustment would apply to temperatures between 5 to 20 ºC.

For 2031 and subsequent MYs, the proposed temperature adjustment would only apply to the 0-5 ºC range.

2. **Summary of Proposed CARB Emissions Standards for NOx**

The CARB proposed FTP, RMC, LLC and idle NOx emissions standards are shown in Table 1 for MHDD and HHDD engines. As indicated earlier, the proposed interim compliance allowance would only apply to the 2027-2034 MY period.

**LHDD engines** - There is no applicable compliance allowance for 2027 and subsequent MYs, and CARB will propose to harmonize with the U.S. EPA duty cycle standards for the FTP/RMC (35 mg/hp-hr) and LLC (50 mg/hp-hr) NOx emissions standards.

**Table 1. CARB Proposed In-Use Duty Cycle NOx Emissions Standards**¹

<table>
<thead>
<tr>
<th>MY</th>
<th>FTP/RMC (mg/hp-hr) *</th>
<th>LLC (mg/hp-hr) *</th>
<th>Idle (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2027-2034 and 2024-2026 complying early with 2027</td>
<td>50</td>
<td>65</td>
<td>10</td>
</tr>
<tr>
<td>2035 &amp; Subsequent</td>
<td>35</td>
<td>50</td>
<td>10</td>
</tr>
</tbody>
</table>

¹Corresponding NOx family emission limits are calculated according to §1036.104(c)(3)

* Compliance allowance is included in the proposed NOx emissions standards

The proposed bins 1 and 2 off-cycle NOx emissions standards are shown in Figures 1 to 3 below. These figures include the impacts of both the temperature adjustment and the interim compliance allowance for various MYs.
Fig. 1 – CARB Proposal for MHDD & HHDD
Bin-2 Off-Cycle NOx Emissions Standards

Fig. 2 – CARB Proposal for LHDD
Bin-2 Off-Cycle NOx Emissions Standards

1Corresponding NOx family emission limits are calculated according to §1036.104(c)(3)
3. Confirmation of NOx Credits

CARB confirms that NOx credits generated under U.S. EPA CTP interim provisions, defined in §1036.150 and calculated according to §1036.705, may be used for 50-state engine certification for MY 2027 and later. CARB will propose and recommend that the Board adopt, starting in MY 2027, a single national ABT program for NOx standards for medium- and all classes of heavy-duty engines and vehicles, administered by U.S. EPA and CARB.
Appendix C – Emission Warranty Information Reporting, In Use Compliance, Advanced Clean Trucks and Advanced Clean Fleet Regulatory Implementation Efforts

A. Interpretation of 13 California Code of Regulations (CCR) 2143 for MYs 2024 to 2034 to Ease Transition

California Code of Regulations, Title 13, Section 2143 provides that CARB’s Executive Officer is authorized to consider specified information in determining whether a recall of a vehicle or engine family is required:

“§ 2143. Failure Levels Triggering Recall and Corrective Action.

An engine family, test group, a vehicle family, or a subgroup shall be subject to a recall when the number of failures of a specific emission-related component exceeds the failure level set forth below, unless the Executive Officer determines from the emission information report that a recall is unnecessary pursuant to the criteria set forth in Section 2148(a) and (b). … In the case of 2024-2026 MY California-certified heavy-duty diesel and Otto cycle engines, and heavy-duty vehicles, vehicles or engines in an engine family or test group shall be recalled or subject to other corrective action at the following failure levels: 4 percent or 25 (whichever is greater). In the case of 2027-2030 MY California certified heavy-duty diesel and Otto-cycle engines, and heavy-duty vehicles, vehicles or engines in an engine family or test group shall be recalled or subject to other corrective action at the following failure levels: 4 percent or 25 (whichever is greater) for the first five years of the warranty period, and 5 percent or 35 (whichever is greater) for years 6 through 7 of the warranty period and 7 percent or 50 for years 8 through 10 of the warranty period.”

Recognizing the challenges associated with making engines and aftertreatment systems to a much stricter emissions standard, for MYs 2024 through 2034, CARB’s Executive Officer confirms that he will objectively evaluate all information submitted by a manufacturer pursuant to 13 CCR sections 2146 and 2148 in assessing whether a recall is required if a vehicle or engine family triggers the recall criteria in 13 CCR sections 2143, 2167, 2168; under the manufacturer-run in-use testing provisions in 86.1915.B of the Diesel Test Procedures; or pursuant to in-use testing run by CARB in 13 CCR sections 2139.5 and 2140. CARB will also consider USEPA’s recall decisions.

B. Advanced Clean Trucks/Advanced Clean Fleets

In a show of good faith, in calendar year 2023, CARB issued guidance on ACT credit reporting, clarifying that compliance determination and sales reporting requirements are both defined when vehicles are produced and delivered for sale in California. CARB staff will also propose to initiate a rulemaking action to that effect in calendar year 2024. Staff also will propose to modify section 1963.3(b) to lengthen the number of years a manufacturer has to make up a deficit from one year to three years.

- OEMs have requested a credit pooling concept for credits and deficits generated in states that have adopted the ACT regulation under section 177 of the federal Clean Air Act. In calendar year 2023, CARB will introduce the concept of pooling across states via a public workshop. CARB staff will work with OEMs and section 177 states in an effort to develop and implement a pooling structure for states that have adopted the ACT regulation to provide OEMs flexibility. To the degree new California rules are required, CARB staff will
propose the pooling concept to the Board as early as possible.

- In calendar year 2023, CARB will hold a public workshop to discuss the appropriate role of hydrogen-fueled internal combustion engines towards meeting the requirements of the ACT and ACF regulations.
EMA and the OEMs have agreed to limit their advocacy, as set forth below, in states that either already have elected to adopt through Section 177 CARB’s Omnibus or ACT rules, or that may choose to do so in the future.

A. In all such cases, EMA and the OEMs will not legally challenge or support others’ legal challenges to any state’s adoption of the regulations set forth in Appendices A and B.

B. The OEMs commit to comply with the 2027 and later model year provisions of the Omnibus regulations, as may be amended by Appendices A and B, adopted in any Section 177 state irrespective of the outcome of any litigation that has been filed or may be filed challenging the waivers or authorizations for those regulations or CARB’s or any state’s overall authority to implement those regulations.

C. EMA and the OEMs will support or not oppose the adoption of CARB’s Omnibus regulations in any prospective Section 177 states provided the adoption is for 2027 and later model years.

D. EMA and the OEMs agree to be neutral (using the three-tier support, neutral, oppose system) in response to any prospective Section 177 states’ proposals to consider adopting the Omnibus, as may be amended by Appendices A and B, regulation for 2024 through 2026 model years; provided, however, that EMA and the OEMs can provide written and verbal comments expressing concerns or issues of implementation, including engine availability for their fleet customers, and can provide other legal requirements of disclosure on business impacts.

E. EMA and the OEMs agree to be neutral (using the three-tier support, neutral, oppose system) in response to any prospective Section 177 States’ proposals to consider adopting CARB’s ACT regulations; provided, however, EMA and the OEMS can provide written and verbal comments expressing concerns or issues of implementation including infrastructure concerns and lack of complimentary policies.

F. The OEMs commit to put forth their best efforts to sell as many zero emission trucks as reasonably possible in every state that has or will adopt CARB’s ACT regulations, even potentially exceeding any future U.S. EPA Phase 3 Greenhouse Gas requirements, irrespective of the outcome of any litigation that has been filed or may be filed challenging the waivers or authorizations for those regulations or CARB’s or any state’s overall authority to implement those regulations.

G. CARB, EMA and the OEMs mutually agree to work together to resolve any issues that may warrant regulatory amendments to either the Omnibus or ACT regulations and to actively promote further needed infrastructure development.