Medium & Heavy Duty Vehicle Industry Panel on Emission Changes

John Hampson - GSA Fleet
Vehicle Engineering Branch Chief & Moderator

Panelists
Rick Motkowicz, GSA Fleet
Jeffery Bodkin, Daimler Trucks North America
Our panelists are:

Jeffrey Bodkin - National Account Executive - Vocational Daimler Trucks - Freightliner and Western Star

Rick Motkowicz - Rick Motkowicz is a vehicle engineer for GSA Fleet, and he oversees vehicles in the medium and heavy programs for GSA Fleet. He is responsible for the Federal vehicle standards and minimum requirements for these programs.
Our Panel will discuss the following:

1. Deciphering the CARB regulations impacting medium/heavy duty truck sales and registrations in California (2024, Washington and other thereafter)

2. Near term vision of alternative fueled Class 6 to Class 8 trucks -

3. How will the industry "fill the gap" with the elimination of diesel and gasoline engines in these markets?

4. How can GSA better support your mission as a vendor? (CARB or other options)
Deciphering CARB Regulations - Fed Fleet 2024
Jeff Bodkin
National Account Manager
Daimler Trucks
January 25th, 2024

Important Notes:
- Regulations are shifting and this information is subject to change
- Not legal advice – please refer to your local regulations and consult your own counsel
US Emissions, GHG and OBD Regulations

California Air Resources Board (CARB)

CARB Zero Emission Vehicle (ZEV) Mandate Implementation (ACT)

CARB Advanced Clean Fleet Rule (ACF)

CARB New Warranty Rule 2022

CARB Ultra-low NOx rule 2024* (0.05g/hp-hr)
-75% NOx, -50% PM

CARB Step2 Warranty increase

CARB Step2 Warranty increase

CARB has announced planned harmonization with EPA27 standards

CARB HD OBD 2019

Environment Protection Agency (EPA)

EPA GHG 21*
-13% Tractor
-12% Truck
-2% Engine

EPA GHG 24*
-20% Tractor
-20% Truck
-4% Engine

EPA GHG 27*
-26.5% Tractor
-25.5% Truck
-5% Engine

EPA27 Low NOx rule
-83% NOx, -50% PM
Warranty and FUL increase

TBD – GHG P3
Likely ZEV sales mandate
Under development

2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031

* Compared to MY2017 baseline

Daimler Truck

Regulatory Update / January 2024
CARB Omnibus Overview

2024
• 2024 – 2026 CARB Low NOx rule still stands
• Alternate compliance paths available using credits provides a wide product portfolio (with volume limitations) in California

2027
• CARB has agreed to harmonize with the core elements of EPA’s 2027 low NOx rule
• Formal rulemaking efforts ongoing

<table>
<thead>
<tr>
<th>Current National Standards</th>
<th>California-Specific Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nox: FTP, RMC</td>
<td>MY24</td>
</tr>
<tr>
<td>0.2 g/hp-hr</td>
<td>0.05* g/hp-hr</td>
</tr>
<tr>
<td>PM: FTP, RMC</td>
<td>0.01 g/hp-hr</td>
</tr>
<tr>
<td>LLC Nox</td>
<td>N/A</td>
</tr>
<tr>
<td>Idling</td>
<td>30 g/h</td>
</tr>
<tr>
<td>HDIUT NTE Procedure CF: 1.5</td>
<td>3-bin MAW CF: 2.0</td>
</tr>
<tr>
<td>Useful Life HHD: 435k mi / 10 years</td>
<td>HHD: 435k mi / 10 years</td>
</tr>
<tr>
<td>Warranty HHD: 350k mi/ 5 years</td>
<td>HHD: 350k mi/ 5 years</td>
</tr>
</tbody>
</table>

• Required for new commercial vehicles registered for use in California and CARB Opt in states
• CARB’24 will to go into effect as planned
• In agreement with Engine Manufacturers’ Association, CARB has announced intentions to harmonize with the core elements of EPA’s MY’27 Standards.
CARB Omnibus Rule CY 2024+

- Currently **CA, CO, MA, NJ, NM, NY, OR, RI, VT and WA** have fully adopted CARB’s Omnibus regulation.

- **Recent Updates:** CT decided against adopting the Omnibus regulation and OR delayed the implementation from 2024 to 2025.

- Regulations expected to apply to vehicles produced and delivered for sale in opt-in states.

- **California Clean Idle Stickers** are only available for CARB certified vehicles.

<table>
<thead>
<tr>
<th>Adopted ‘24</th>
<th>Adopted ‘25</th>
<th>Adopted ‘26</th>
<th>Adopted ‘27</th>
<th>Considering Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>MA, OR</td>
<td>NY, VT, WA</td>
<td>CO, NJ, NM, RI</td>
<td>CT, IL</td>
</tr>
</tbody>
</table>
Does my vehicle need a California Clean Idle Label?

Diesel Truck and Bus Idling Enforcement

▪ California has rules that limit diesel truck and bus idling to 5 minutes.

▪ Trucks and buses with certified Clean Idle stickers can idle for more than 5 minutes in most areas.

▪ The Clean Idle Label is not necessarily required to be able to operate in California*, however idling laws will apply, and the driver, or fleet owner can be held responsible.

▪ Many states have similar rules – and some recognize the Clean Idle Sticker. It is important drivers and fleets familiarize themselves with idle laws in the area they are operating (see QR code on the left).


Please send questions to: detroitprodmktg@daimlertruck.com
Starting 2024, manufacturers required to sell a percentage of ZEVs based on annual sales volume of on-road vehicles produced and delivered for sale in CA.

- Vehicles and Powertrains must be CARB-certified.
- Finalized March 15, 2021

CARB Advanced Clean Fleet sunsets the ACT rule and replace with a **100% ZEV Sales Mandate in 2036**

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Starting in 2036, all On-Road vehicles sold in California must be ZEVs.

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Table A-1: ZEV Sales Percentage Schedule

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Class 2b-3 Group</th>
<th>Class 4-8 Group</th>
<th>Class 7-8 Tractors Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2024</td>
<td>5%</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>2025</td>
<td>7%</td>
<td>11%</td>
<td>7%</td>
</tr>
<tr>
<td>2026</td>
<td>10%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>2027</td>
<td>15%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>2028</td>
<td>20%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>2029</td>
<td>25%</td>
<td>40%</td>
<td>25%</td>
</tr>
<tr>
<td>2030</td>
<td>30%</td>
<td>50%</td>
<td>30%</td>
</tr>
<tr>
<td>2031</td>
<td>35%</td>
<td>55%</td>
<td>35%</td>
</tr>
<tr>
<td>2032</td>
<td>40%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>2033</td>
<td>45%</td>
<td>65%</td>
<td>40%</td>
</tr>
<tr>
<td>2034</td>
<td>50%</td>
<td>70%</td>
<td>40%</td>
</tr>
<tr>
<td>2035</td>
<td>55%</td>
<td>75%</td>
<td>40%</td>
</tr>
</tbody>
</table>
Currently CA, CO, MA, NJ, NM, NY, OR, RI, VT, and WA have fully adopted CARB’s ACT rule.

Recent Updates: CT and ME decided against adopting the ACT regulation.

Additional states are considering adopting the ACT rule for 2027+

The following states have signed a Multi-State MOU for MD and HD ZEVs, but not taken further action: DC, HI, NV, PA, VA.

Regulations expected to apply to vehicles produced and delivered for sale in these states.

<table>
<thead>
<tr>
<th>Adopted ‘24</th>
<th>Adopted ‘25</th>
<th>Adopted ‘26</th>
<th>Adopted ‘27</th>
<th>Considering Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>MA, NJ, NY, OR, WA</td>
<td>VT</td>
<td>CO, NM, RI</td>
<td>CT, IL, ME, MD, NC</td>
</tr>
</tbody>
</table>
California’s Advanced Clean Fleets Rule

• California’s ACF Rule regulates the fleets that operate in California (not just sold/registered/domiciled).
• Fleets need to plan for compliance.
• Different rules for different fleet types:
  • High Priority and Federal Fleets.
  • Drayage Fleets.
  • State and Local Government Fleets.
• ACF rule targeted to take effect in 2024.
• In late December 2023 CARB has announced some ACF reporting and enforcement delays. These will be discussed later in this presentation.

DTNA cannot and does not provide legal advice. Information provided represents DTNA’s best information regarding the changing regulatory landscape as of January 9, 2024; all facts and laws are subject to change. Contact your legal counsel for the current state of the law and for all legal advice.
CARB’s ACF – High Priority and Federal Fleets

- **Scope and applicability:** Own, operate, or direct vehicles in CA, with >50M USD revenue nationally, or 50+ vehicles nationally.

- “California Fleet” is any vehicle that enters California – even for a single day.

**Two Paths for Compliance:**

**Prime Path:** Starting 2024, all vehicles added to the CA fleet must be ZEVs. ICE’s must be retired at 18 years or 800,000 miles (min. 13 years).

**Optional ZEV milestone phase-in path:** Instead of above, fleets may register to opt-in to an optional path to maintain a target number of ZEVs, as a percent of their California fleet.

### Milestones

<table>
<thead>
<tr>
<th>Group</th>
<th>Zero-Emission Fleet Percentage</th>
<th>10%</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Box trucks, vans, two-axle buses, yard trucks</td>
<td>2025</td>
<td>2028</td>
<td>2031</td>
<td>2033</td>
<td>2035</td>
</tr>
<tr>
<td>Group 2</td>
<td>Work trucks, day cab tractors, three-axle buses</td>
<td>2027</td>
<td>2030</td>
<td>2033</td>
<td>2036</td>
<td>2039</td>
</tr>
<tr>
<td>Group 3</td>
<td>Sleeper cab tractors and specialty vehicles</td>
<td>2030</td>
<td>2033</td>
<td>2036</td>
<td>2039</td>
<td>2042</td>
</tr>
</tbody>
</table>

**Fleets that operate in California need to start putting plans in place to comply with this rule.**

**Exemptions / Exclusions:**

Exemptions are available for certain vehicle types, as well as delays in infrastructure or vehicle availability.

Exemptions require documentation and approval by CARB. Fleets must show proactive efforts 12 months ahead of a compliance deadline to be eligible:

- Purchase orders for vehicle delivery delay.
- Executed contracts and permits for site construction and electrification.

- All new non-ZEV vehicles added to the CA fleet must be CARB certified.
Recent ACF Communication by CARB – Enforcement Delay

On December 28th 2023 CARB issued a letter to CTA with the following information (see QR code for a link):

- CARB has agreed not to enforce the reporting or registration requirements of the ACF as it applies to high priority fleets and drayage until a waiver determination is issued by EPA.
- Fleets may voluntarily report and apply for flexibility provisions.
- CARB encourages fleets to continue to comply with the registration and reporting requirements while the waiver decision is pending.
- CARB reserves the right to take enforcement action to remove internal combustion trucks added after 1/1/24 that would not otherwise be in compliance with the ACF.

CARB planning to publish an Enforcement Advisory.

https://ww2.arb.ca.gov/sites/default/files/2023-12/231227carbctaletter.pdf

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CARB HD Inspection and Maintenance Rule – “Clean Truck Check”
Applies to all diesel and alternative-fuel HD vehicles operating in California

- **Register** trucks in HD I/M database starting in 2023
  - **Deadline extended until end of Jan 2024**
- **Obtain/maintain** vehicle compliance certificate, including annual compliance fee.
- **Perform periodic** vehicle compliance tests:
  - Bi-annual OBD data snapshot with certified HD I&M tools.
  - OR -
  - Install a certified continuously connected OBD telematics device

- A vehicle with an illuminated MIL does not meet the compliance requirements.
- Robust enforcement efforts, including plate readers and roadside emissions checks.
  - 30 days to respond to notice to submit testing

Failure to comply may result in fines, registration holds, and even vehicle impoundment.
Fleets that operate in California need to have plans in place to comply with this rule.
EPA GHG Phase 3 Rulemaking

- Proposal released April 2023 – leverages existing GHG P2 framework, but requires significant ZEV penetration

Proposed ZEV Adoption Mandates for New Commercial Vehicles

<table>
<thead>
<tr>
<th>MY27</th>
<th>MY28</th>
<th>MY29</th>
<th>MY30</th>
<th>MY31</th>
<th>MY32</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Straight Trucks</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
</tr>
<tr>
<td>Day Cab Tractors</td>
<td>10%</td>
<td>12%</td>
<td>15%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>Sleeper Cab Tractors</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Main proposal shown above. EPA is considering alternate scenarios ranging in lower stringency (~5% lower) to higher stringency up to 60%.

Initial Draft Rulemaking - April ‘23
Final Rule Published - April ‘24
Expected Implementation - 2027+