Proposed Advanced Clean Fleets (ACF) Regulation Preliminary Language Revisions Workshop

February 13, 2023
Prior Public Meetings

• August 30, 2022: Staff report posted
• October 27, 2022: First Board hearing
• December 12, 2022: Waste and wastewater fleet Workgroup
• January 13, 2023: Infrastructure delay and ZEV Availability Workgroup
• Individual stakeholder meetings
Today’s Outline

• Background
• Amendments and modifications
  • 100 Percent Zero-Emission Vehicle (ZEV) Sales
  • Drayage Trucks
  • High Priority Fleets
  • State and Local Government Fleets
  • Shared Provisions
• Heavy-Duty Omnibus regulation
  Key language changes throughout presentation will be marked with “*”
Background
**Biggest Trucks Have Highest Emissions**

### Daily Truck Population

- **Class 7-8 Tractors**
  - 219,000 (12%)
- **Class 4-8 Straight Trucks and Buses**
  - 427,000 (24%)
- **Class 2b-3 Trucks and Vans**
  - 1,164,000 (64%)

### Daily NOx Emission

- **Class 7-8 Tractors**
  - 129.7 tpd (48%)
- **Class 2b-3 Trucks and Vans**
  - 68.5 tpd (26%)
- **Class 4-8 Straight Trucks and Buses**
  - 69.3 tpd (26%)

Source: California Air Resources Board (CARB) Emissions Inventory EMFAC2021, (https://arb.ca.gov/emfac/) Calendar Year 2021, including California International Registration Plan (IRP) and out-of-state IRP trucks; excludes motor homes, transit buses, and school buses.
Governor’s goal - 100% zero-emission transportation by 2045 where feasible
Measures to Clean Up Heavy-Duty Vehicles

2018
Innovative Clean Transit

2019
Zero Emission Airport Shuttle

2020
Advanced Clean Trucks

2020
Heavy-Duty Omnibus

2021
Heavy-Duty Inspection and Maintenance

Future
Zero-Emission Truck Measure

2023
Advanced Clean Fleets
Maximum Emissions Reductions from Truck Engines

- Existing diesel trucks upgraded to 2010 engines 2023
- Heavy-duty Omnibus regulation effective 2024
  - Engine standards, test procedures and other controls
  - Averaging, banking, and trading program
- Heavy-duty Inspection and Maintenance approved 2022
- Low Carbon Fuel Standard
  - Requires switching to lower carbon transportation fuels
Advanced Clean Trucks Regulation

• Manufacturers to sell ZEVs in all vehicle classes as a percentage of total sales
• 320,000 ZE trucks to California by 2035
• Adopted 2020
California is not Alone

Section 177 of the Clean Air Act allows states to adopt California motor vehicle standards.

Adopted ZEV Regulations
- Advanced Clean Cars - 12 states
- Advanced Clean Trucks - 7 states

Medium- and Heavy-duty ZEV Commitments
- 17 states and DC
- Province of Quebec, Canada

Province of Quebec, Canada
National Policy Changes

• Inflation Reduction Act
  • Incentives up to $40,000 per zero-emission truck
• 27th Conference of the Parties to the United Nations Framework Convention on Climate Change
  • 30 percent of new commercial delivery vehicles, buses, and trucks sales to be zero-emission by 2030
  • 100 percent zero-emission sales by 2040
ZEV Models in United States

135 models already delivered to fleets, 148 different models are available to be ordered/pre-ordered,
More than 500 ZEV models available worldwide as of October 2022
ZE Tractor Commercial Availability

Available 2022
- BYD 8TT
- Freightliner eCascadia
- Kenworth T680E
- Lion Electric LION8
- Nikola TRE
- Peterbilt 579
- Volvo VNR Electric

Planned 2023
- Hyundai XCIENT
- XOS HDXT
- Nikola One/Two
- Tesla Semi
- Hyzon Class 8
Draft Regulation Language
ACF Regulation Components

100 Percent ZEV Sales Requirement

Drayage Trucks

State and Local Government Fleets

High Priority Fleets
100 Percent ZEV Sales

Section 2016
100 Percent ZEV Sales Requirement

Begins 100 percent ZEV sales in 2036 instead of 2040 model year [§2016(b)]*

- Provides certainty to the market and supply chain for manufacturers, fleets, infrastructure providers, service technicians, partner agencies, and local governments
- Expands market choice

Starting 2036, all Class 2b-8 vehicles sold into California must be ZEVs
Drayage Trucks

Section 2014
Drayage Trucks Requirements

Applies to Class 7-8 on-road trucks operating at California’s seaports and intermodal railyards

- December 31, 2023: Registration required for legacy trucks
- January 1, 2024: Newly added drayage trucks must be ZEVs
- January 1, 2025: Must annually report mileage for trucks over 12 years
- January 1, 2035: All drayage trucks must be ZEVs

• Legacy trucks may operate until the end of their useful life
• Must visit a regulated seaport or railyard at least once a year
• May use limited extensions
General Drayage Truck Changes

- Definitions [§2014(b)]*
- Compliance deadlines and reporting [§2014.1]*
- Shared language
  - Accident provision [§2014.1(a)(8)(H)]*
  - Sales disclosure requirements [§2014.1]*
  - Vehicle Delivery Delay Extension [§2014.2]*
    - Extend use of existing truck until replacement is delivered
  - Infrastructure Extension Delay [§2014.2(b)]*
    - Extend use of existing truck until infrastructure is ready
Changes to Definitions

Definitions [§2014(b)]

• Clarified current definitions
• Added definitions
  • Concrete mixer
  • Dedicated auto-transport
  • Dedicated fuel delivery vehicle
  • Mobile crane
  • Power take-off
• Internal combustion engine
• Minimum useful life
• SAE J1667
• Smoke Opacity test
Compliance Deadlines and Reporting

Compliance deadlines and reporting [§2014.1]

• Updated reporting dates and process for terminals
  • Updated reporting dates from February 15 to January 31
  • Clarified that terminals report to respective authorities
• Clarified odometer reporting requirements
  • Report odometer reading as of January 1 for legacy trucks
    subject to the minimum useful life requirements
• Removed physical or mailing reporting option
  • Electronic online reporting only
High Priority Fleets

Section 2015
Applicability

- Affected fleets [§2015(a)(1)]
  - $50M or more in total gross annual revenue reported to the US Internal Revenue Service in prior calendar year*
  - Owns, operates, or directs 50 or more trucks
  - Common ownership or controls 50 or more trucks
  - Federal government agency
- Affected vehicles [§2015(a)(2)]
  - Gross vehicle weight rating (GVWR) greater than 8,500 lbs.
  - Package delivery vehicles GVWR 8,500 lbs. or below
  - Yard tractors
Model Year Schedule Summary

January 2024
Registration required for legacy trucks

January 1, 2024
Newly added trucks must be ZEVs or NZEVs

January 2025
Must annually report mileage for tractors over 12 years

January 1, 2025*
ICE vehicles removed after useful life exceeded

- Legacy trucks may operate until the end of their useful life
- May use certain exemptions and extensions
- ICE vehicle removals begin January 2025 [§2015.1(b)]*
### Model Year Schedule Example

<table>
<thead>
<tr>
<th>Legacy Truck Engine Year</th>
<th>18 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2028</td>
</tr>
<tr>
<td>2011</td>
<td>2029</td>
</tr>
<tr>
<td>2012</td>
<td>2030</td>
</tr>
<tr>
<td>2013</td>
<td>2031</td>
</tr>
<tr>
<td>2014</td>
<td>2032</td>
</tr>
<tr>
<td>2015</td>
<td>2033</td>
</tr>
<tr>
<td>2016</td>
<td>2034</td>
</tr>
<tr>
<td>2017</td>
<td>2035</td>
</tr>
<tr>
<td>2018</td>
<td>2036</td>
</tr>
<tr>
<td>2019</td>
<td>2037</td>
</tr>
<tr>
<td>2020</td>
<td>2038</td>
</tr>
<tr>
<td>2021</td>
<td>2039</td>
</tr>
<tr>
<td>2022</td>
<td>2040</td>
</tr>
<tr>
<td>2023</td>
<td>2041</td>
</tr>
<tr>
<td>2024</td>
<td>2042</td>
</tr>
</tbody>
</table>

- California fleet
  - All additions must be ZEVs
  - Legacy trucks removed
- Tractors
  - Earlier of 18 years or
  - End of year when odometer exceeds 800,000 miles
- Yard trucks and all other vehicles
  - 18 years
General Changes for High Priority Fleets

• Definitions*
• Any new ICE vehicle purchase must be California certified [§2015.3(r)]*
• Compliance deadlines and reporting [§2015.4(l)]*
• Exemption for test/demo vehicles [§2015.3(e)(1)]*
• Switching between compliance options [§2015(d)]*
• Extend merger or acquisition period to 1 year [§2015(k)(1)]*
• Late reporting provision [§2015.4(l)]*
General Changes, Cont’d

• If the original engine year is unknown, the engine year will be the vehicle model year less 1 year [§2015(b)]*
• Vehicle sales disclosure [§2015(q)]*
• Clarification that lease renewal is not a new addition to fleet [§2015(b)]*
Model Year Schedule Provisions

• Extensions allow for extended use of legacy trucks
  • Vehicle Delivery Delay [§2015.1(c)(5)] *
  • Infrastructure Delay [§2015.1(c)(3)]*
  • Backup vehicles [§2015.1(c)(1)]
• Exemptions to purchase new California certified ICE vehicles when the legacy truck has >700,000 miles or >16 years*
  • ZEV Purchase Exemption if not available as ZEV [§2015.1(c)(6)]*
  • Daily Usage Exemption [§2015.1(c)(2)] *
• Mutual Aid Exemption for new ICE purchases [§2015.1(c)(8)]*
• Accident provision [§2015.1(c)(10)]*
State and Local Government Fleets

Section 2013
State and Local Government Requirements

2024-2026

- 50 percent of purchases must be ZEV or NZEV*

January 1, 2027

- All purchases must be ZEV or NZEV*

- Agencies in designated counties and divisions with 10 or fewer trucks exempt until 2027*
- May use exemptions and extensions

* Designated Counties
Exemptions and Extensions

• May purchase new ICE vehicle with California certified engine if the existing vehicle is 13 years old or more*
  • Daily usage exemption [§2013.1(b)]*
  • ZEV purchase exemption [§2013.1(d)]*
• May purchase used ICE vehicle with a 2010 or newer engine to operate as a backup vehicle [§2013.1(a)]
• Mutual aid exemption [§2013.1(e)]*
• Intermittent snow removal vehicle exemption until 2030 [§2013(n)(7)]*
• May postpone ZEV purchases temporarily
  • Infrastructure delay [§2013,1(c)]*
Summary of Changes

• Transit agencies excluded until 2030 [§2013(c)(9)]*
  • Exclude maintenance trucks and reporting
• More flexibility for fleets complying jointly [§2013(k)]*
  • Department of General Services on behalf of state fleet
• Access to ZEV Milestone Option [§2013(d)]*
  • Opt-in period closes January 1, 2030
ZEV Milestones Option

Section 2015.2
Optional ZEV Milestone Phase-in

- Open to High Priority and State and Local Government fleets*
- Must meet ZEV milestones as a percent of total fleet
- Flexibility to add new ICE vehicles that are California certified*
- Flexibility to add used ICE vehicles with 2010 or newer model year*
- Rental vehicle provision [§2015.2(d)]

<table>
<thead>
<tr>
<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: Box trucks, vans, 2-axle buses, yard trucks, light-duty package delivery vehicles</td>
<td>2025</td>
<td>2028</td>
<td>2031</td>
<td>2033</td>
<td>2035</td>
</tr>
<tr>
<td>Group 2: Work trucks, day cab tractors, 3-axle buses</td>
<td>2027</td>
<td>2030</td>
<td>2033</td>
<td>2036</td>
<td>2039</td>
</tr>
<tr>
<td>Group 3: 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>

Work truck means any single-unit truck that is not a box truck, van, bus, or specialty vehicle
# ZEV Milestone Option Example

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th># of Vehicles</th>
<th>ZEVs in 2025</th>
<th>ZEVs in 2029</th>
<th>ZEVs in 2033</th>
<th>ZEVs in 2037</th>
<th>ZEVs in 2041</th>
<th>ZEVs in 2042</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box trucks, vans, two-axle buses, yard trucks</td>
<td>60</td>
<td>6</td>
<td>15</td>
<td>45</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Work trucks, day cab tractors, three-axle buses</td>
<td>20</td>
<td>0</td>
<td>2</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Sleeper cab tractors and specialty vehicles</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>ZEV Milestones</td>
<td>100</td>
<td>6</td>
<td>17</td>
<td>60</td>
<td>85</td>
<td>95</td>
<td>100</td>
</tr>
</tbody>
</table>
ZEV Milestone Option Example (Cont’d)

50% ZEVs by 2030

13 year

18 year

50% ZEVs by 2032

ZEV Milestone Example for Mixed Fleet A
Exemptions and Extensions

- Purchase new California certified* ICE vehicles if remaining ICE vehicles cannot be replaced with ZEVs or NZEVs
  - ZEV Purchase Exemption if a ZEV is not available [§2015.2(f)(6)]*
  - Daily Usage Exemption [§2015.2(f)(2)]*
    - Must apply 1 year before compliance date
- Existing ICE vehicles will count as ZEVs temporarily
  - Infrastructure Delay [§2015.2(f)(4)]*
  - Vehicle Delivery Delay [§2015.2(f)(5)]*
- Vehicles excluded from fleet ZEV calculation
  - Backup vehicles [§2015.2(f)(1)]
  - Intermittent snow removal vehicles until 2030 [§2015.2(f)(10)]*
  - Mutual Aid Exemption ICE vehicle purchases [§2015.2(f)(8)]*
- Waste and wastewater fleets extension [§2015.2(e)]*
- Transient rental vehicle provisions [§2015.2(d)]
Rental Vehicle Provision

- Applies to rental fleets using the ZEV Milestones option
- Provides smooth transition to ZEVs for highly transient interstate rental vehicles
- Rental fleet owners may exclude individual transient interstate rental vehicles from the ZEV milestone calculations and meet milestones based on the average
- Annual updates during annual reporting
Shared Language Applicable to Different Fleets
## Shared Provisions Overview

<table>
<thead>
<tr>
<th>Shared Provision Name</th>
<th>Model Year Schedule</th>
<th>ZEV Milestones</th>
<th>State and Local Government</th>
<th>Drayage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Delivery Delay (updated)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Infrastructure Delay Provisions (updated)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Vehicle Sales Disclosure (new)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ZEV Purchase Exemptions (updated)</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Daily Usage Exemptions (updated)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Accident/Non-Repairable Vehicle Provisions (new)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Five-Day Pass (new)</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Mutual Aid Provisions (updated)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Waste and Wastewater Fleet Provisions (new)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Intermittent Snow Removal Vehicle Provisions (new)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Backup Vehicle Exemption</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Hiring Entity Requirements</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Vehicle Delivery Delay Extension

- Allows for continued use of an existing ICE vehicle until replacement ZEV is received
- ZEV purchased one year ahead of next compliance date
- If manufacturer cancels a ZEV order*
  - Fleet owner may place another order for suitable ZEVs within 180 days*
- During next reporting period email proof of purchase to trucrs@arb.ca.gov with VIN of truck to be replaced
Infrastructure Delay Extension

Section §2013.1(c), §2014.2(b), §2015.3(c)
Infrastructure Delay Extension Summary

- Applies to ZEV infrastructure upgrades at fleet sites
- Addresses circumstances beyond fleet owner’s control
- Must deploy all ZEVs that can be supported by site
- Project must begin 1 year prior to compliance date
  - Construction delays
  - Site electrification delays*
- Must apply 45 days before next compliance date
Construction Delays

- Project start based on permit issue date
- Circumstances include
  - Change of a general contractor
  - Unexpected safety issues
  - Discovery of archeological, historical, or tribal cultural resources
  - Natural disasters
  - Delay in manufacture and shipment of zero-emission charging and fueling infrastructure equipment*
- Extension issued up to two years
  - Total project time up to three years*
Site Electrification Delays

• Addresses utility delays in supplying sufficient power
• Project start date when utility contract signed for signed attestation from utility to proceed with project
• First extension up to 3 years
• Can extend for up to 2 more years
• Sunsets January 1, 2030
Infrastructure Extension Process

- Email supporting documentation to trucrs@arb.ca.gov
- Describe reason for delay
- Initial site capacity in kW, ZEV information, capacity of charging/fueling equipment the utility can support each year until the project is complete
- Preliminary infrastructure capacity for all sites if fleet owner has more than one
Vehicle Sales Disclosure

• Fleet owners must disclose potential applicability of California regulations when selling vehicles*
  • “An on-road vehicle operated in California may be subject to the California Air Resources Board Advanced Clean Fleets regulations or other regulations. It therefore could be subject to requirements to reduce emissions of air pollutants.”
ZEV Purchase Exemption

§2013(n)(5), §2015.1(c)(6)
ZEV Purchase Exemption Summary

• Allows for ICE purchase if ZEV in needed configuration is not available
  • Expanded to include Class 2b-3 vehicles
• Streamlined exemption process
  • Excludes pickups, two-axle buses, box trucks, vans, and on-road tractors
• Fleet-specific exemption process*
## ZEV Chassis Available in All Weight Classes

<table>
<thead>
<tr>
<th>Class 2b</th>
<th>Class 3</th>
<th>Class 4</th>
<th>Class 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ford E-Transit Chassis Cab</td>
<td>• Via Motors Electric Chassis Cab</td>
<td>• Bollinger E-Chassis</td>
<td>• Freightliner MT50e Custom Chassis</td>
</tr>
<tr>
<td>• Ford E-Transit Cutaway</td>
<td></td>
<td>• Envirotech Cutaway Van</td>
<td>• Zeus Z-19 Electric Chassis Cab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• GreenPower EV Star Cab and Chassis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VMC Optimal E1 Cutaway Chassis</td>
<td></td>
</tr>
</tbody>
</table>

### Class 6

- Zeus Z-22 Electric Chassis Cab
- Zeus Z-26 Electric Chassis Cab
- Freightliner MT50e Custom Chassis
- Lion 6 Cab and Chassis
- International eMV Chassis
- BYD 6F Cab and Chassis

### Class 7

- International eMV Chassis
- Volvo VNR 4x2 Straight Truck Chassis
- Volvo VNR 6x4 Straight Truck Chassis

### Class 8

- BYD 8TT Tandem Axle Chassis
- Lion 8 Tractor Truck Cab and Chassis
- Lion 8 Straight Truck Cab and Chassis
- Volvo VNR 4x2 Tractor Chassis
- Volvo VNR 6x2 Tractor Chassis
- Volvo VNR 6x4 Tractor Chassis
Same ZEV Chassis with Multiple Configurations
Class 2 - 3

- BrightDrop Zevo Step Van 250 Miles
- Ford E-Transit Chassis Cab 126 Miles
- Ford T-350 Cargo Van 126 Miles
- Ford F-150 Lightning 240 Miles
- Bollinger B2 200 Miles
- Workhorse C-650/ C-1000 Step Van 100-150 Miles
- Lightning eMotors ZEV3 Cargo Van 140 Miles
- Rivian R1T 260-400 Miles
Class 4 - 7

- **BYD 6F**
  - 200 Miles

- **BYD 6R**
  - 80 Miles

- **Envirotech Cutaway**
  - 170 Miles

- **Envirotech Logistic Van**
  - 170 Miles

- **Envirotech Urban Truck**
  - 170 Miles

- **Freightliner MT50e**
  - 150-170 Miles

- **GreenPower EV Star**
  - 150 Miles

- **Kenworth K270E/ K370E**
  - 100-200 Miles
Class 4 - 7

- SEA Hino 195EV
  200 Miles

- Freightliner eM2
  230 Miles

- Lightning eMotors ZEV4
  130 Miles

- Lightning eMotors E-450
  105 Miles

- Lion Lion6
  200 Miles

- Motiv Epic F-59
  105 Miles

- Motiv Epic E-450
  105 Miles

- Motiv Epic E-450
  105 Miles

Vehicle Purchase Exemption
Class 4 - 7

- **Optimal EV E1**: 125 Miles
- **Peterbilt 220 EV**: 200 Miles
- **Phoenix ZEUS 500**: 70-160 Miles
- **XLE Battery Electric Refuse Truck**: 100 Miles
- **International eMV**: 135 Miles
- **Volvo 4x2 Straight**: 175 Miles
- **Zeus Electric Truck**: 175-210 Miles
- **VMC Optimal S1 Shuttle Bus**: 125 Miles
Class 8

- Lion Lion8 Straight: 170 Miles
- Lion Lion8 Refuse: 170 Miles
- Lion Lion8 Bucket: 130 Miles
- Mack LR Electric: 100 Miles
- Peterbilt 520 EV: 80-100 Miles
- Terex EV Aerial Bucket Truck: 135 Miles
- Van Hool TDX25E: 260 Miles
- BYD C10MS Bus: 230 Miles
Class 8 Tractors

- BYD 8TT: 124 Miles
- Freightliner eCascadia: 155-230 Miles
- Kenworth T680: 150 Miles
- Lion Lion8 T: 221 Miles
- Nikola TRE BEV: 330 Miles
- Peterbilt 579 EV: 150 Miles
- Hyzon Class 8 Hydrogen: FCEV 350-500 Miles
- Volvo VNR Electric: 175-275 Miles, 4x2, 6x2 or 6x4 axles
Class 8 – Yard Trucks

BYD 8Y  
10+ Hour Range

Kalmar Ottawa T2E+  
8-20 Hour Range

Lonestar SV S12, S22  
12-22 Hour Range

OrangeEV  
24 Hour Range
ZEV Availability Criteria

- Zero-Emission Powertrain certified (if applicable)
- Available for order from at least one manufacturer*
- ZEV is available within next 2 model years
- Does not include:
  - Demonstration/test/experimental vehicles
  - Manufacturer placeholder reservations for future models
Streamlined ZEV Purchase Exemption

• CARB to list vehicle body type categories that are not available to purchase as ZEVs
• Fleets may purchase ICE on streamlined list
  • No need for fleet owners to apply for exemptions
  • Designate ICE vehicles to be replaced
  • Report new vehicle when received and keep records
Fleet-Specific Exemption Process

- Email to trucrs@arb.ca.gov
  - Existing vehicle configuration, weight class, photos, specification sheet
  - Any frame attachments critical for primary function
  - Make, model of body equipped on vehicle
  - Documentation from at least two manufacturers stating the configuration is not available as a ZEV
- CARB to review and respond within 45 days
Final Determination

- CARB to solicit feedback from manufacturers
  - Will direct applicant to manufacturer/upfitter that supplies the vehicle; or,
  - Will grant exemption request that provides six months to purchase ICE vehicles of that configuration
- Exemption request denied if suitable vehicle in the same or next higher weight class is available
- Information may be used to add/remove vehicles from the streamlined list
Daily Usage Exemption

Section 2013.1(b), 2015.3(b)
Most Trucks Travel <100 Miles Per Day

Percent of Vehicles in Mileage Bin

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

- Water
- Sweeper
- On-Road Yard Tractor
- Car/Suv
- Van-Step
- Off-Road Yard Tractor
- Drill Rig
- Vacuum
- Beverage Truck
- Garbage Side Loader
- Van-Passenger
- Tow
- Crane
- Garbage Packer
- Van-Cargo
- Other
- Service Body
- Pickup Bed
- Dump
- Boom/Bucket
- Concrete Pump
- Garbage Front Loader
- Flatbed Or Stake Bed
- Bus-Shuttle
- Box Dry Van
- Tank
- Garbage Roll-Off
- Bus-Other
- Concrete Mixer
- Concrete Day Cab
- Car Carrier
- Tractor Sleeper Cab

ACT Large Entity Reporting Data, owned vehicles
Daily Usage Exemptions

• Allows for new ICE vehicle purchase if available ZEV cannot meet duty cycle for same truck type in fleet
  • Mileage for all trucks in 30 day period within last year
  • Collected energy usage data from ZEV and comparable ICE vehicle for 5 consecutive business days*
• 10% of fleet must be ZEVs to apply
• Approved exemption provides 180 days to make purchase
Non-Repairable Vehicles*

• Allows purchase of used ICE vehicle to replace vehicle lost due to accident
• Replacement with same or newer model year engine
• Must submit documentation and information regarding replacement vehicle
Five-Day Pass*

- New option to allow for intermittent use of ICE vehicles in California [§2015.1(c)(9)]*
- Vehicle excluded from California fleet for consecutive 5-day period
- Report and receive pass online 1 time per vehicle
Earlier Access to Mutual Aid Provisions

• Applies to fleets with mutual aid agreements after exceeding ZEV fleet thresholds

<table>
<thead>
<tr>
<th>Date</th>
<th>ZEV Fleet Threshold*</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2024</td>
<td>25%*</td>
</tr>
<tr>
<td>January 1, 2032</td>
<td>50%*</td>
</tr>
<tr>
<td>January 1, 2035</td>
<td>75%</td>
</tr>
</tbody>
</table>

• May purchase new California certified ICE vehicles until 25% of fleet using ZEV purchase exemptions
• Does not apply to ZEVs with fast mobile fueling solutions nor pickups, buses, box trucks, vans, nor tractors
Mutual Aid Exemption Process

- When meeting ZEV threshold, email trucrs@arb.ca.gov
  - Reason for the exemption request
  - Description of needed ICE vehicle configuration
  - Documentation showing the equivalent ZEV or chassis cannot be refueled within one hour*
  - Copy of the mutual aid agreement
- Approved for ICE vehicle purchase if conditions met
- Report ICE vehicle information when vehicle received
Waste and Wastewater Fleet Extension

- Delays ZEV phase-in until 2030 for existing trucks using biomethane
- Counts CNG trucks in fleet as of January 1, 2024
  - Group 1 and 2 vehicles counted Group 3
  - Fleet retains same delayed schedule when replacing existing CNG trucks with other CNG or ZEVs
- Can keep purchasing CNG trucks while meeting ZEV milestones
- No extra time for existing diesel trucks

<table>
<thead>
<tr>
<th>Total Percent ZEVs</th>
<th>10%</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milestone Group 3</td>
<td>2030</td>
<td>2033</td>
<td>2036</td>
<td>2039</td>
<td>2042</td>
</tr>
</tbody>
</table>
Waste and Wastewater Fleet Vehicles

- Waste fleet CNG vehicles
  - Rear, side, and front-loader compactor trucks, tractors exclusively used as transfer trucks, or roll-off trucks
- Wastewater fleets that directly supporting the operation of facilities that collect and process diverted in-state organic waste to produce biomethane
  - All CNG vehicles
- Must be exclusively fueled with biomethane (ok if part of Low Carbon Fuel Standard)
Delayed ZEV Schedule Example

Group 2 Vehicles - 10 diesel and 90 CNG
Intermittent Snow Removal Vehicles*

• Temporary exemption until 2030
• Vehicle that is equipped with a plow mounting attachment with a control system for the purpose of removing snow, and may also have one or all the following features: traction material spreader attachment with a control system; or a de-icing system attachment with a control system
• Fleets must request vehicles to be designated intermittent snow removal vehicles
Backup Vehicle Exemption

• Allows backup vehicles used less than 1000 miles per year to be excluded from annual ZEV requirements
  • Excludes miles in support of declared emergency
Hiring Entity Requirements

• Motor carrier, broker, government agency, person, entity that hires and operates or hires and directs the operation of vehicles subject to:
  • Drayage truck requirements
  • State and Local Government requirements
  • High-Priority Fleet requirements
• Must verify compliance
• Disclose regulation applicability when hiring fleets
ZEV and Emissions Projections
Significant Increase in Medium and Heavy-Duty ZEVs Expected (2025 to 2050)
Baseline emissions include ACT, Heavy-Duty Omnibus, and Truck and Bus. Heavy-Duty Inspection and Maintenance and Clean Truck Plan not shown for consistency with Staff Report.
NOx Emissions Results (tpd)

- Lower NOx emissions every year
  - California certified engine requirement
  - Earlier 100% ZEV sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Staff Report</th>
<th>Draft Modifications</th>
<th>Net Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2031</td>
<td>20.0</td>
<td>29.9</td>
<td>9.9</td>
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<tr>
<td>2037</td>
<td>52.0</td>
<td>60.0</td>
<td>8.0</td>
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<tr>
<td>2045</td>
<td>83.9</td>
<td>86.4</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Baseline emissions include ACT, Heavy-Duty Omnibus, and Truck and Bus. Heavy-Duty Inspection and Maintenance and Clean Truck Plan not shown for consistency with Staff Report.
Baseline emissions include ACT, Heavy-Duty Omnibus, and Truck and Bus. Heavy-Duty Inspection and Maintenance and Clean Truck Plan not shown for consistency with Staff Report.
GHG Emissions Benefit (MMT CO2/Year)

- Slight increase in GHG emissions through 2036 due to Waste and Waste-Water Fleet provisions
- Lower GHG emissions starting 2036 due to earlier 100% ZEV sales

<table>
<thead>
<tr>
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<th>Draft Modifications</th>
<th>Net Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2031</td>
<td>4.6</td>
<td>4.4</td>
<td>-0.1</td>
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<tr>
<td>2037</td>
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<td>11.6</td>
<td>0.7</td>
</tr>
<tr>
<td>2045</td>
<td>19.9</td>
<td>21.6</td>
<td>1.7</td>
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</tbody>
</table>

Baseline emissions include ACT, Heavy-Duty Omnibus, and Truck and Bus. Heavy-Duty Inspection and Maintenance and Clean Truck Plan not shown for consistency with Staff Report.
Next Steps

• 15-day change package posted in March
  • Formal comment period for Board consideration
• Second Board hearing April 27-28, 2023
Heavy-Duty Engine and Vehicle Omnibus Regulation
Background

- Established lower NOx and PM emission standards starting in 2024 model year (MY)
- Approved by Office of Administrative Law in 2021
- Provided legacy engine provisions to ease transition to 0.05 gram per brake horsepower hour (g/bhp-hr) NOx standards
  - 0.20 g/bhp-hr legacy engines can be sold
  - All additional emissions must be offset with heavy-duty ZEVs, or in limited cases, other credits
- Caps on allowable legacy engines:
  - MY 2024: Up to 45 percent of manufacturer's total CA heavy-duty diesel engines
  - MY 2025: Up to 25 percent of manufacturer's total CA heavy-duty diesel engines
Additional Flexibility May Be Needed

- Manufacturers working to certify Omnibus compliant products for MY 2024
- Unanticipated changes in product lines may indicate the need for additional legacy engines beyond current production caps and/or need for provisions to mitigate the incremental cost of legacy engines
Possible Solutions

- Adjust the 45 percent and 25 percent productions caps on legacy engines
- Change NOx credit pricing threshold from $4,000 for each medium heavy-duty engine to dollar per Megagram ($/Mg)
- Allow cross-trading of credits between different service classes to offset legacy engine deficits
- Other ideas?

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  mitzi.magtoto@arb.ca.gov