

CARB Advanced Clean Fleets Workshop

On September 18th, the California Air Resources Board (CARB) held a public workshop for the proposed Advanced Clean Fleets regulation. This regulation is focused on strategies to ensure that the cleanest vehicles are deployed by government, business, and other entities in California to meet their transportation needs. This effort is part of a comprehensive strategy to achieve a zero-emission vehicle (ZEV) truck and bus fleet by 2045 everywhere feasible and significantly earlier for certain market segments such as last mile delivery, public fleets, and drayage applications. The initial focus of the proposed regulation would be on larger entities and the vehicles they use or hire to meet their needs. Below are notes from the workshop:

Outline

1. Background and overview of ZE truck market
2. Rule principles
3. Rule framework concepts
4. Market segments
5. Questions (asked after each section)

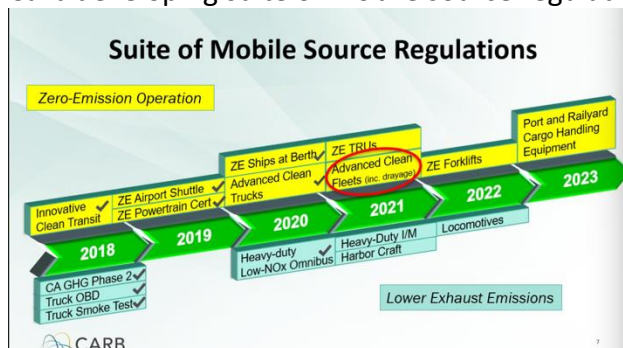
Background and Overview of ZE Truck Market (Paul Arneja)

Overview

- Transportation is largest source of California GHG
 - a. The state has a long list of listed reduction goals
- California has the worst air quality in the nation
- Heavy-duty trucks and transportation are major contributors
- Certain disadvantaged communities disproportionately affected
- ZEV are the best solution

Regulatory Outlook

- Carb developing suite of mobile source regulations



- CARB to review Advanced Clean Fleet component in 2021

Regulatory Environment

- Innovative Clean Transit provision (2018)
 - Goals for full ZE fleet by 2040
- ZE Airport Shuttle Buses (2019)

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- Fleet fully ZEV by 2035
- Advanced Clean Trucks (June 2020)
 - Expected to encourage ~33,000 ZEV trucks by 2027 and ~100,000 by 2030
- Advanced Clean Trucks Resolution
 - Return by end of 2021 with ZE fleet rule
- Multistate MD/HD ZEV MOU
 - 15 states and DV signed MOU to support rapid expansion of ZEV market
- Low Carbon Fuel Standard (LCFS)
 - Requires 20% reduction of statewide fuel pool by 2030
 - Low carbon producers earn credits
- City, State, and Port Policies Enacted
 - *presenter skipped this, will be in posted slides

Inter-Agency Coordinate

- CEC: AB 2127 assessing statewide charging infrastructure
- CPUC: SB350 supporting transportation electrification
- GO-Biz: support and coordination for deployment

ZEV Truck Market

Overview

- Transit buses and airport shuttles lead the way
- ZE buses already available in nearly all configuration and most major producers have or are developing models
 - Major manufacturers entering market by 2024
 - Service providers making transition as well
- Battery density and cost reductions expected to continue
- Favorable TCO prior to 2030
- High potential to electrify tractors (what does this include?)

Supporting Programs

- SB350, ~\$700 million through 2023 for three largest utilities to support deployment
- LCFS, slide illustrates cost saving for BEV with LCFS

Regulatory Framework (Bruce Tutor)

Principles in developing regulations

- Maximize ZEV deployment and GHG goals
- Focus on disadvantaged communities
- Simple and streamlined compliance and enforcements
- Match regulations with different business models

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Rulemaking framework Overview

- Initial focus on trucks
- Target largest fleets for early deployment
- Enable full transition to ZEV with secondary markets
- Align manufacturers with ZEV sale requirements

Regulated Fleet Concepts

- Consider how different business models might be impacted
- How do we define a fleet? Sub-haulers/contracted vehicles?
- How does this impact ZEV goals?

SB 1-Minimum Useful Life Criteria

- Purpose: Ensure that HD vehicle owners guaranteed useful vehicle over certain period

ZEV Purchase Framework

- In order to meet goals, a 100% ZEV purchases needed by 2027
- Areas to address: Used truck purchases, changes in sub-haulers contracts
- Need to close loopholes and require exemptions process if no ZEV available

ZEV Fleet Standard Framework

- Percent of fleet must be ZEV by milestone dates
- Must report fleet to CARB annually
- Allows for used-vehicle purchases

Green Fleet Contracting

- Many large entities contract their fleets
- CARB would list ZE fleets and mandate usage
- Two approaches: 1) Fleets could need to be certified 2) companies would need to ensure that they are contracting a baseline number of ZEVs (more flexible)
 - Would require fleet reporting and audits

Zero-Emissions Zones Framework

- Areas where only ZEVs could enter

Other Regulatory Frameworks:

- ZE Mile Standard: fleet has to meet some baseline of ZE milage. Complicated.
- Infrastructure Requirements: Has potential but won't be discussed today

Market Segments

Public Fleets 2030 ZEV Goals

- Fully ZEV by 2035
- About 100,000 class 2b-8

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- City, county, and state-owned vehicles
- Phase-in: some required purchases by 2023, all ZEV purchases by 2026
- No significant subcontracting or competitive disadvantage issue
- Consistent with normal truck purchase cycle

First/Last Mile Deliver

- 100% ZEV by 2035 goal
- Parcel, food, linen services, home deliver, etc.
- Initial estimate: spans 80,000 vehicles
- Lots of contracting and sub-hauling

First/Last Mile Standards

- Need registry of owned, leased, and contracted vehicles
- New vehicles added to fleets would need to be ZEV
- Potential Milestones: X% in fleet by 2025, 50% by 2030, 100% by 2035
- Must report fleet composition annually to CARB starting 2023

Drayage Trucks

- 100% by 2035 goal (with potential exceptions)
- Transition all class 7 and 8 drayage trucks to ZEV by 2035
- Build on current regulatory structure and CARB/seaport registration programs

ZE Drayage Truck Concept

- By 2023, any truck added to CARB Drayage Truck Registry must be ZE
- All drayage trucks ZE by 2035

Utilities

- All trucks types and uses ZE by 2040 where feasible

Refuse Services

- Completely ZE fleet by 2040
- 16,000 vehicles (mostly class 7-8)
- Mostly owned or contracted by municipalities
- Require green fleet contracting for waste services

Buses and Shuttle Buses

- Completely Ze by 2040
- Private sector buses like shuttles, limos, motor coaches, etc
- About 25,000 fleet not covered under current regulations
- Need to establish ZEV fleet standard for these large bus fleets
- Require green contracting for large entities and government

Green Fleet Contracting Requirements

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- Large entities and government must own/hire green fleets for certain services starting in 2025
- Soliciting feedback on what sectors and services are appropriate to include

Tractors (non-drayage)

- Largest vehicle emissions category
- Long-haul not suitable for electrification yet
- Looking for feedback on how to approach this

All trucks ZEV by 2045 goal

- Recognize difficulty of electrifying certain applications
- Recognize importance of electric used truck market
- What is the appropriate role of plug-in hybrids?
- Curious on regulatory strategies/outlook for fast-fueling hydrogen infrastructure

Questions

Background and Overview of ZE Truck Market:

Question: Why not identify/differentiate the FCEV?

Answer: BEV and FCEV are 'interchangeable' for the overall ZEV requirement. They are differentiated in more specific contexts.

ZEV Truck Market

Question: What is the current understanding of the number of vehicles under each category?

Answer: Not decided, CARB requesting fleets to report information on vehicle use so there is enough data to make determination.

Comment: ZE emissions is both battery and hydrogen

Answer: "...that is correct"

Question: Is SB 350 going to private owned yards or operators who use them?

Answer: For heavy-duty applications the LCFS credits go to station owners. For distributed light-duty, credits are handled by utility.

Question: How does this account for natural gas?

Answer: Will be considered. Overall approach is ZEV where possible, cleanest option everywhere else

Question: Comment on graph of average mile-per-day of trucks. Good for estimating energy consumption but problematic for analyzing ZEV transition. Analysis should consider max duties.

Answer: Correct. Holding a workshop next week on fleet reporting requirements which are intended to collect data to address this. Company-specific data very important.

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Regulatory Frameworks

Question: Comment on the need for immediate clarity. Expressed 'anxiety' over the fact that companies are making decision now with uncertainty in regulatory process. Emphasized the need for more infrastructure and multi-agency approach. Are there proposed milestones for these going forward?

Answer: ARB working closely with industry to figure this out. Asking for fleet reporting to compile data necessary to formulate proposals.

Question, Port of Long Beach: SB 1 (minimum useful life) does not match up with 2035 goals, how will you address that?

Answer: Will ensure the two are consistent. There are other mechanisms in place to meet these goals.

Question: You talk about owned and hired vehicles. What about vehicles that are leased?

*Answer: Regulations will of course account for this. Some details to dissect. *Asker not satisfied with lack of specificity.*

Questions, SoCalGas: What does public infrastructure for class 8 charging look like and what is CARBS role? Additional comments on shortcomings in drayage approach.

Answer: This is a broader question than can be addressed now. CARB has allocated funding for infrastructure deployment.

Question, Trucking Association: What about trucks coming from out of state? Will this put California companies at a competitive disadvantage to companies with multistate companies that can just buy a truck in another state?

Answer: Expect BEV TOC to reach cost parity, main issue is then upfront cost. This means the competitiveness on long-term basis is not necessarily worse, just need mechanisms to help companies overcome initial purchases

Question: How will the concept work for sub-contractor leased vehicles?

Answer: Broadly, if you own 100 and 20 sub-contracted trucks, counts as 120 truck fleet.

Market Segment Discussion

Question: Concerned about leasing, recommends consistency. What authority does CARB have for private fleet purchase mandates?

Answer: Assurance that CARB will confirm policies with legal department. California has more authority than federal gov due to clean air act. Purchase standards are similar to setting engine standards.

Question: What about renewable energy for charging standards?

Answer: Important and addressed by other policies and regulation.

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After Lunch Open Floor

Question, CaFCP: Can you expand on 2027 timeframe for 100% ZE truck purchases?

Answer: This is the goal, includes flexibility to account for where it's feasible and where it's not.

Question, Tesla: Can you share how the goal of harmonizing with ACT regulation will affect fleet goals

Answer: sales in 2021 can be used to meet 2024 obligations that will come about in 2024 (i.e. credits) to encourage early action.

Comment, Union of Concerned Scientists: Expressed general approval.

Question, CALSTART: Can you speak to inter-agency coordination, specifically regarding the CEC infrastructure planning?

Answer: CEC is the lead agency on lots of the modelling and CARB has been coordinating closely with them and a number of other agencies.

Comment, SoCal Edison: Pointed out the diversity of utility fleets and stated that there are many applications which currently aren't suited for electrification. Also affirmed that Edison sees this transition as an opportunity. Made a 'plug' for plug-in hybrids.

Questions, comments and feedback can be sent to: zevfleet@arb.ca.gov

For more information go to: <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets>