



October 17, 2022

Honorable Chair Liane Randolph
 Honorable Board Members
 California Air Resources Board
 1001 "I" Street
 Sacramento, CA 95814

RE: Support for a More Ambitious Advanced Clean Fleets Rule

Dear Chair Randolph and California Air Resources Board Members,

On behalf of the undersigned groups and the communities we represent (“Commenters”), we urge the California Air Resources Board (CARB) to direct Staff to strengthen the proposed Advanced Clean Fleets (ACF) rule before final adoption. This can be accomplished by directing Staff to propose for final adoption the three recommendations below, included in Alternative 2: Accelerated ZEV Transition, as presented in the Initial Statement of Reasons (ISOR). This includes:

1. Moving the 100 percent MHD ZEV sales date from 2040 to 2036; and
2. Ensuring all Class 7 and 8 tractors are subject to the same transition schedule beginning 2027 while lowering the High Priority Fleet threshold for Class 7 and 8 tractors from 10 or more trucks.

As you know, diesel trucks are one of the fastest-growing sources of greenhouse gas (GHG) emissions,¹ a dominant source of California’s nitrogen oxide (NOx) pollution,² and the largest source of air pollution disparity in the United States.³ Without immediate action, the freight industry’s rapid growth means pollution burdens will worsen, especially for low-income communities and communities of color in California due to longstanding injustices that disproportionately located freight routes in those communities.⁴ In addition, parts of the trucking industry contain pervasive and extreme worker exploitation, often linked directly to environmental noncompliance.⁵ CARB’s efforts to regulate controlling entities rather than drivers are, therefore, critical and must be expanded to cover more fleets.

The ACF rule is vital to addressing California’s air quality, climate, and environmental justice crises by requiring a portion of medium- and heavy-duty (MHD) vehicle fleets to transition to zero-emission vehicles (ZEVs). Commenters commend CARB Staff on including Alternative 2, which clearly shows the cost-effectiveness of much greater emissions reductions. But Staff’s rejection of this alternative is not reasonable. The generalized concerns outlined in the ISOR and expressed by some stakeholders do not justify foregoing the massive benefits of Alternative 2 in favor of a proposal that falls short of achieving the goals in Governor Newsom’s EO N-79-20⁶ and CARB’s 2020 Mobile Source Strategy⁷ and would leave about half of the truck population combustion powered by 2045, imperiling air quality and public health throughout the state.⁸

Strengthening the ACF rule is a technically feasible and cost-effective opportunity for CARB to move the state closer to meeting the clean air and climate objectives while encouraging high-road jobs across the

¹ OECD, International Transport Forum 2021 Outlook, (May 2021) <https://www.oecd-ilibrary.org/sites/e8125f08-en/index.html?itemId=/content/component/e8125f08-en>.

² CARB, Mobile Source Strategy Presentation, (Oct. 28, 2021) <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2021/102821/21-11-2pres.pdf>.

³ Mary Demetillo et al., Space-Based Observational Constraints on NO₂ Air Pollution Inequality from Diesel Traffic in Major US Cities (Aug. 25, 2021) <https://doi.org/10.1029/2021GL094333>.

⁴ See also <https://www.healtheffects.org/publication/systematic-review-and-meta-analysis-selected-health-effects-long-term-exposure-traffic>; <https://www.edf.org/media/study-new-research-links-higher-street-level-traffic-related-air-pollution-increased>; <https://www.edf.org/media/new-study-reveals-large-and-unequal-health-burden-air-pollution-californias-bay-area>; <https://www.edf.org/media/study-street-level-air-pollution-increases-health-risk-among-elderly>

⁵ Carol Zabin et al., Truck Driver Misclassification: Climate, Labor, and Environmental Justice Impacts (Aug 22, 2019) <https://laborcenter.berkeley.edu/truck-driver-misclassification/>

⁶ Exec. Order No. 79-20 (2020) <https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf>

⁷ CARB, Mobile Source Strategy Presentation, (Oct. 28, 2021) <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2021/102821/21-11-2pres.pdf>

⁸ CARB, Advanced Clean Fleets Initial Statement of Reasons, 275, (August 30, 2022).

supply chain and economic justice for incumbent truck drivers.⁹ As shown in the figures below, Alternative 2 would put 230,000 more ZEVs on the road by 2050, leading to significant emission reductions compared to Staff’s proposal and additional economic benefits for fleets.

Figure 80: Statewide Population Forecast over Time under Accelerated Zero-Emission Vehicle Transition (Alternative 2)

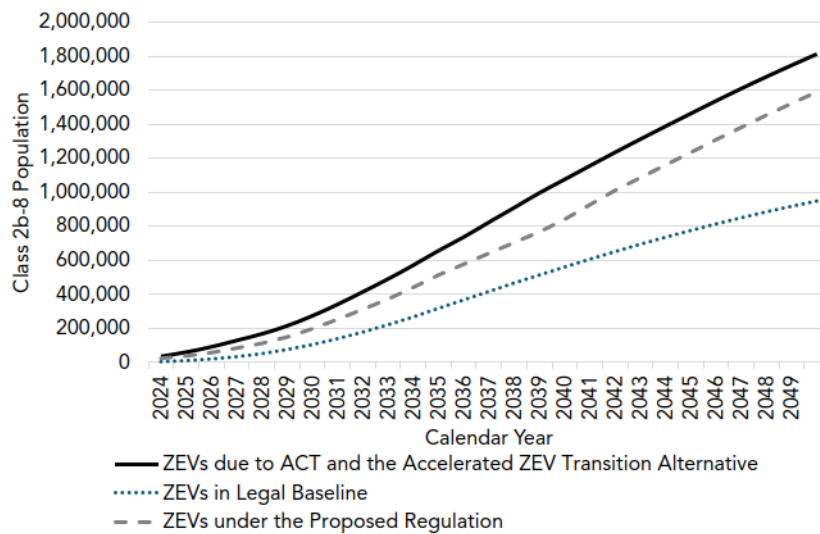
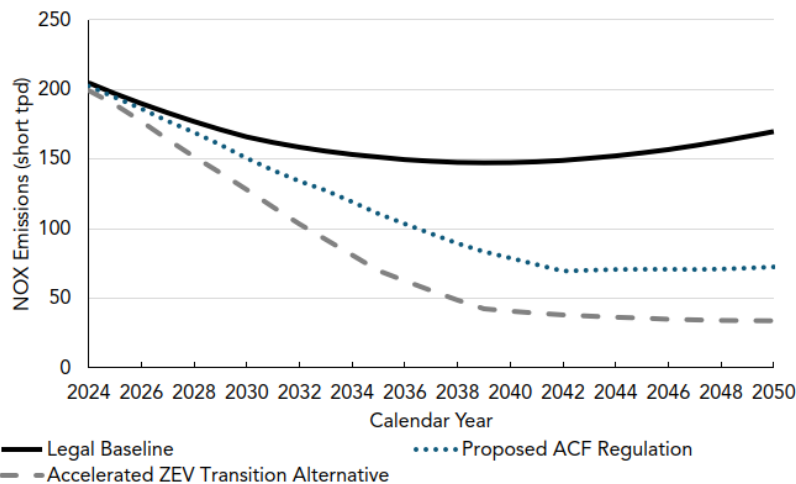
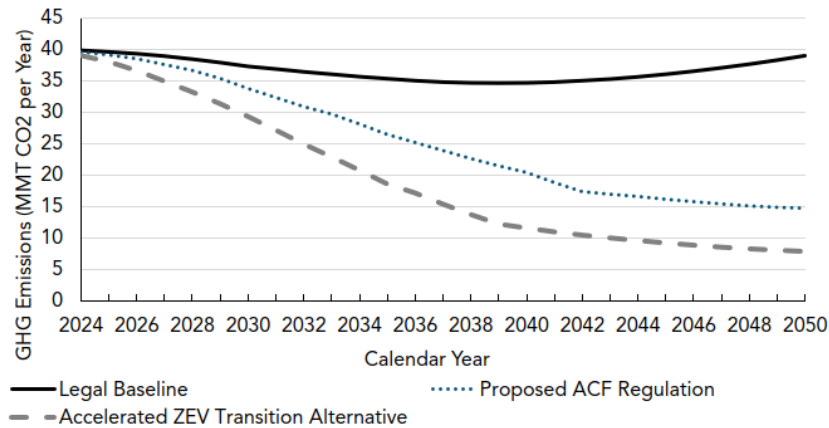


Figure 81: Projected NOx Emissions under Legal Baseline, Proposed ACF Regulation, and Accelerated Zero-Emission Vehicle Transition (Alternative 2)



⁹ Ellen Robo et. al., California Clean Trucks Program: An Analysis of the Impacts of Low NOx and Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy, (2022) https://www.nrdc.org/sites/default/files/media-uploads/california_clean_trucks_program.pdf

Figure 83: Projected Greenhouse Gas Emissions under Legal Baseline, Proposed ACF Regulation, and Accelerated Zero-Emission Vehicles Transition (Alternative 2)



Source: *Advanced Clean Fleet Rule, Initial Statement of Reasons*

These comments explain the necessary revisions to the current ACF rule proposal, contained in Alternative 2, to better align with California’s targets and the benefits and feasibility of doing so. These comments also respond to the arguments for not recommending the stronger alternative despite its feasibility and clear benefits. Staff’s overly conservative “balance” runs counter to the facts on the ground – from the rapid adoption of MHD ZEVs and historic federal investments in electrification to the accelerating climate tragedies and continued examples of failing state air plans – all of which show more is possible and necessary. Incorporating our recommendations will deeply and positively impact public health, workers, and the economy.

Adopt Alternative 2: Accelerated ZEV Transition¹⁰

Adopting Alternative 2 will lead to significantly more emissions reductions,¹¹ public health benefits,¹² benefits to workers, cost savings to fleets, and ZEVs on the road than the current ACF proposal.¹³ The Board should direct Staff to incorporate the following changes into the final rule:

1. Move the 100 percent MHD ZEV sales date from 2040 to 2036.
2. Further reduce emissions from highly emitting Class 7 and 8 tractors by:
 - a. Moving Class 8 Sleeper Cabs from Group 3 to Group 2 vehicles in the High Priority Fleets Rule so that all Class 7 and 8 tractors are subject to the same transition schedule beginning 2027 (instead of 2030); and
 - b. Lowering the High Priority Fleet threshold for Class 7 and 8 tractors from 50 to 10 trucks.

¹⁰ In the ISOR, Alternative 2 includes setting the ZEV Milestones Option for Group 2 vehicles to be the same as Group 1. These comments are not suggesting this change be made when it refers to adoption of Alternative 2. In all other cases, Commenters support and agree with the inclusions in Alternative 2.

¹¹ ISOR, pg. 238

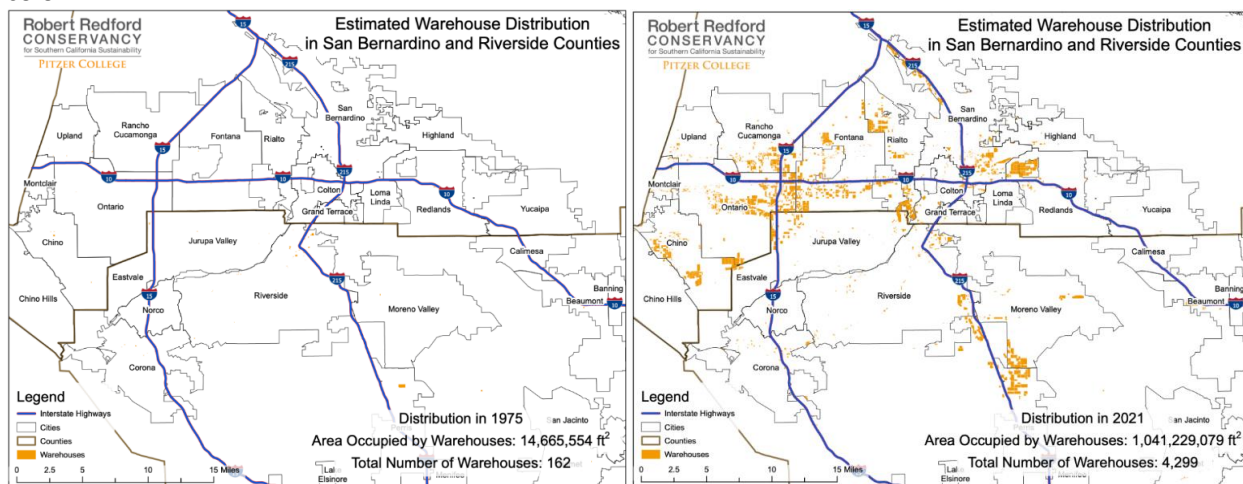
¹² ISOR, pg. 239

¹³ Ellen Robo et. al. California Clean Trucks Program: An Analysis of the Impacts of Low NOx and Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy, (2022) https://www.nrdc.org/sites/default/files/media-uploads/california_clean_trucks_program.pdf

Commenters commend CARB for the strong standards incorporated for drayage and state and local government fleets.

Urgent Action is Needed

The communities across California suffering from freight pollution need Alternative 2's emission reductions now. The state is failing to meet National Ambient Air Quality Standards in the most polluted air basins in the nation¹⁴ and is on track to miss its 2045 climate targets. According to the American Lung Association, California cities consistently have the worst air pollution in the country for ozone and particulate matter.¹⁵ Meanwhile, emissions from freight are rising,¹⁶ and new warehouses and logistics centers continue rapidly devouring the land and polluting the air around low-income communities of color.¹⁷



Source: Robert Redford Conservancy

The above graphics show the distribution of warehouses in Riverside and San Bernardino Counties and the growth of warehouses over the last 40 years.¹⁸ Research shows a direct correlation between these warehouses and higher fine particulates (PM2.5) levels in the surrounding communities. Compared to other census tracts, the land near warehouses tends to have less value, more air and noise pollution, and residents that are lower income and majority Hispanic.¹⁹ The rapid growth of warehouses in California, and the truck traffic they attract, have significant environmental justice implications and must be addressed.

Advancing the 100 percent sales requirement to 2036 and addressing the impacts of the highest polluting vehicles will provide earlier and larger reductions in NOx, PM2.5, and GHGs, and avoid thousands more additional deaths and hospitalizations than the current proposal. Staff's conservative

¹⁴ American Lung Association, State of the Air – Report Card: California (Accessed July 24, 2022)

<https://www.lung.org/research/sota/city-rankings/states/california>

¹⁵ American Lung Association, Most Polluted Cities 2022, (2022) <https://www.lung.org/research/sota/city-rankings/most-polluted-cities>

¹⁶ Chris Busch et al., California Energy Policy Simulator Update – Earlier Action Delivers Social and Economic Benefits (June 16, 2022) <https://energyinnovation.org/wp-content/uploads/2022/06/California-Energy-Policy-Simulator-Insights.pdf>.

¹⁷ Kaveh Waddell and Maanvi Singh, Warehouses in their Backyards: When Amazon Expands, These Communities Pay the Price (Dec. 9, 2021) <https://www.theguardian.com/us-news/2021/dec/09/when-amazon-expands-these-communities-pay-the-price>.

¹⁸ Pitzer College, Estimated Warehouse Distribution in San Bernardino and Riverside Counties (2022) <https://www.pitzer.edu/redfordconservancy/mapping-data-visualization/>

¹⁹ Priyanka N. deSouza, Sudheer Ballare, Deb A. Niemeier, The environmental and traffic impacts of warehouses in southern California, Journal of Transport Geography, Volume 104, 2022, 103440, ISSN 0966-6923, <https://doi.org/10.1016/j.jtrangeo.2022.103440>.

estimate, which excludes recent federal incentives, is that Alternative 2 would produce an additional \$10 billion net benefit savings (a 21 percent increase over the proposed alternative).²⁰ Alternative 2's comparative benefits include the following:

- Over \$34 billion in additional health benefits;
- An additional 60 percent reduction in NOx and PM2.5 emissions;
- A 54 percent greater reduction in GHG emissions;
- A 2 percent increase in net cost savings to fleet owners;
- An additional 230,000 MHD ZEVs on the road by 2050; and
- Avoiding over 3,000 additional premature deaths.²¹

Cumulative Benefits by 2050				
	Proposal	Alternative 2	Difference	% Difference
Cost Savings				
Net Fleet Cost Savings (\$billions)	\$22.1	\$22.5	\$0.4	2%
Health Benefit Savings (\$billions)	\$57.8	\$92.1	\$34.3	59%
Net Benefit Savings* (\$billions)	\$46.9	\$56.7	\$9.8	21%
Social Cost of Carbon Reductions (\$billions) at 3% discount rate	\$26.0	\$37.4	\$11.4	44%
Emissions Reductions				
NOx Reductions (tons)	418,938	673,970	255,032	61%
PM 2.5 Reductions (tons)	8,627	13,710	5,083	59%
GHG Reductions (MMT CO2e)	307	472	165	54%
Public Health Benefits				

²⁰ ISOR pg. 241

²¹ ISOR, List of Alternatives

Avoided Cardio Pulmonary Deaths	5,517	8,791	3,274	59%
Avoided ER Admits for Asthma	2,537	4,056	1,519	60%
Total ZEV's				
Increased ZEVs	1,580,000	1,810,000	230,000	15%
*Includes costs, savings, health benefits, and tax/fee reductions				

Source: Selected data from the Advanced Clean Fleets Rule, Initial Statement of Reasons

1. Require 100 Percent MHD ZEV Sales by 2036

Accelerating the 100 percent ZEV sales requirement to 2036 instead of 2040 is necessary and feasible. The change will bring us closer to achieving the Governor’s Executive Order and the Board Resolution requiring all on-road MHDVs to be zero-emission by 2045. Additionally, reporting suggests Environmental Protection Agency (EPA) plans to issue a supplemental proposal this December for the agency's proposed pollution standards for MHDV model years 2027-2029 to consider the impacts of the Inflation Reduction Act (IRA) and the extensive information already in the record on the need for and feasibility of MHD ZEV deployment. It is critical for EPA to swiftly finalize these standards, and strengthening the ACF rule will accelerate ZEV deployment and create a strong foundation for the federal government to move forward with protective emissions standards.

All new MHDV sales being zero-emission by 2036 helps mitigate the risk of misalignment between supply and demand and permits CARB to set stronger fleet purchase requirements. Without this change, a recent analysis demonstrates that MHD ZEV sales in California could decline after 2035.²² If the 100 percent sales target remains at 2040 and fleet requirements are met, it will cause manufacturers to over comply with the ACT rule leading to an accumulation of unused credits by 2035 when the sales requirements all plateau. Original equipment manufacturers (OEMs) will have a choice: continue increasing ZEV sales volumes or retire credits for compliance. Should they choose the latter, it could suppress ZEV sales between 2036 and 2039, causing over 170,000 fewer MHD ZEV sales.

Even when only considering accelerating the sales requirement to 2036, cumulative net societal benefits are projected to jump \$9.9 billion by 2050 due to improved air quality, reduced GHGs, higher utility net revenue, and fleet savings. This four-year change would reduce cumulative emissions through 2050 of GHGs by 24 million metric tons (MT), NOx by over 30,000 MT, and PM2.5 by 1,040 MT.²³

Moving the 100 percent MHD ZEV sales requirement to 2036 better reflects the pace of technological and market advancements while sending a clear signal that will prime the investment pump for deployment at scale.²⁴ Included as Attachment A is an annotated list of resources supporting the feasibility of 100 percent MHD ZEVs by 2036. It is important to note that Staff, for their part, has not

²² Ellen Robo et. al. An Analysis of the Impacts of Low NOx and Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy, (2022) https://www.nrdc.org/sites/default/files/media-uploads/california_clean_trucks_program.pdf

²³ ibid

²⁴ Noel Melton, Jonn Axsen, Barbar Moawad, Which plug-in electric vehicle policies are best? A multi-criteria evaluation framework applied to Canada.” *Energy Research & Social Science*, Volume 64, 2020, 101411, ISSN 2214-6296, <https://doi.org/10.1016/j.erss.2019.101411>.

argued that moving the 100 percent target from 2040 to 2036 would be infeasible. Their arguments against Alternative 2 focus on expanded fleet coverage, not manufacturer capacity to increase sales.

The manufacturing and infrastructure capacity to support an earlier new sales target is underway and accelerating. Despite Volvo's opposition to strong CARB rules, Roger Alms, head of Volvo Trucks, recently explained that "[the] shift to electric is happening a lot faster than people think" and predicted that 70 percent of Volvo's truck sales in Europe, which has strict rules, will be full battery electric by 2030.²⁵ Significant private investment is occurring in the US to build out a national network of chargers (more details below)²⁶ while manufacturers continue to advance the production of MHD ZEVs.²⁷ Legacy and new entrant OEMs operate or are constructing manufacturing plants, assembly lines, and battery factories to deliver an increasing supply of ZEVs. For example, Statevolt is building a \$4 billion EV battery gigafactory with a 54 GWh output, supporting the buildout of about 650,000 ZEVs in Southern California.²⁸ Tesla is expanding its Fremont battery facility,²⁹ and the US is expected to more than double its battery production capacity by 2025.³⁰ Meanwhile, billions of dollars in the form of grants and loans are also pouring in from the federal government thanks to the recent Infrastructure Investment and Jobs Act (IIJA) and IRA that will further boost domestic ZEV production.³¹

As investments mature, production grows, and costs decline. As a result of CARB's previous actions, numerous models of MHD ZEVs are now available for purchase from 30 different manufacturers, a 625 percent increase from 2019.³² Already, CARB has listed 154 HVIP-approved ZEVs, including models for each major segment of the MHDV market.³³ New announcements continue pouring in for vehicle offerings,³⁴ manufacturing and battery factories, and ZEV procurement and sale commitments.³⁵ Helping drive the transition is growing demand from fleets increasingly turning to ZEV technology to lower fuel and maintenance costs and deliver on environmental, social, and corporate governance strategies. CARB's analysis shows that many MHD ZEV vocations today have a positive total cost of ownership (TCO). By 2030, MHD ZEVs in nearly every vehicle category are expected to have a more favorable TCO than their combustion counterparts.³⁶ However, the ISOR analysis excludes the recent federal incentives for manufacturers and purchasers of MHD ZEVs.

²⁵ Giles Parkinson, "Biggest technology leap in history:" Australia missing out on electric truck revolution (September 28, 2022) <https://thedriven.io/2022/09/28/biggest-technology-leap-in-history-australia-missing-out-on-electric-truck-revolution/>

²⁶ See [Daimler Truck North America](#), [Volvo Trucks](#), [Penske Trucks](#), [NATSO](#), [Loves Travel Stops](#)

²⁷ See, e.g., Volvo, "News and Stories" <https://www.volvotrucks.com/en-en/news-stories.html> ; Daimler, "Global Media Site" <https://media.daimlertruck.com/marsMediaSite/en/instance/ko/Start.xhtml?oid=4836258> ; Traton, Press Releases" https://traton.com/en/newsroom/press_releases.html .

²⁸ Ryan Kennedy, EV Battery gigafactory with 54 GWh Output Planned for Southern California (April 19, 2022) <https://pv-magazine-usa.com/2022/04/19/ev-battery-gigafactory-with-54-gwh-output-planned-for-southern-california/>

²⁹ Caballero, Nicholas, Tesla Files Application for EV Battery Production in Fremont, California (September 3, 2022) <https://www.torquenews.com/15475/tesla-files-application-ev-battery-production-fremont-california>.

³⁰ Alice Yu, Top electric vehicle markets dominate lithium-ion battery capacity growth, (February 16, 2021) <https://www.spglobal.com/marketintelligence/en/news-insights/blog/top-electric-vehicle-markets-dominate-lithium-ion-battery-capacity-growth>

³¹ "Text - H.R.3684 – 117th Congress (2021-2022): Infrastructure Investment and Jobs Act." *Congress.gov*, Library of Congress, 16 November 2021, <https://www.congress.gov/>.

"Text - H.R.5376 - 117th Congress (2021-2022): Inflation Reduction Act of 2022." *Congress.gov*, Library of Congress, 16 August 2022, <http://www.congress.gov/>.

³² CALSTART, Zeroing in on Zero-Emission Trucks (February 2022) https://calstart.org/wp-content/uploads/2022/02/ZIO-ZETs-Report_Updated-Final-II.pdf

³³ ISOR, Appendix J

³⁴ Fred Lambert, Mercedes Benz eActros Long-Haul Electric Truck (September 19, 2022) <https://electrek.co/2022/09/19/mercedes-benz-eactros-longhaul-electric-truck/>

³⁵ CALSTART, Review of Commitments for Zero Emission Medium- and Heavy-Duty Vehicles, (December 2021) https://globaldrivetozero.org/site/wp-content/uploads/2021/12/Review-of-Commitments-for-Zero-Emission-Medium-and-Heavy-Duty-Vehicles_Dec_2021_Final-.pdf

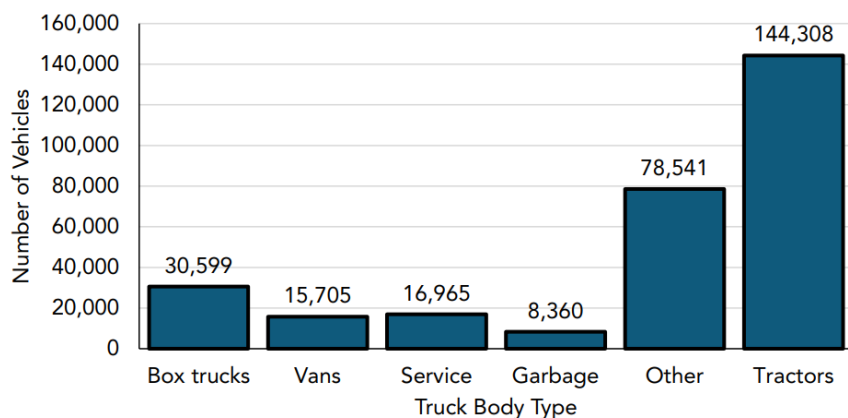
³⁶ ISOR, Appendix G

As described below, when the incentives in the federal IIJA and IRA are included, every category of MHD ZEVs will have a favorable TCO, as well as up-front purchase price parity with their diesel counterparts well before 2036.³⁷ These findings are corroborated by preliminary results from a forthcoming report (Attachment H) showing that the IRA credits will accelerate ZEV's purchase parity with a diesel equivalent so that all segments analyzed will meet purchase price parity with their diesel counterparts immediately in 2023.³⁸ The case for a stronger sales mandate is overwhelming. The Board should direct Staff to revise the proposal to require 100 percent ZEV sales beginning in 2036.

2. Reduce Class 7 and 8 Tractor Pollution

Even with 100 percent ZEV sales by 2036, over 750,000 MHDVs, roughly a third of all MHDVs driving on California roads would be polluting combustion engine vehicles.³⁹ Additional action is needed to meet air quality and GHG targets, as well as the objectives established in Governor Newsom's Executive Order. CARB can begin by doing more in the final ACF rule to cut pollution from Class 7 and 8 tractors. Critically, Governor Newsom's order and CARB's ACT Board Resolution call for CARB to fully convert drayage vehicles to ZEV operations by 2035. The rule cannot achieve these goals as currently structured.

Class 7 and 8 tractors ("tractors") contribute a significant and disproportionate amount of the climate-warming and air pollution from California's heavy-duty fleet. While only about 1 percent of the state's total vehicle population, tractors are responsible for around 13 percent of GHG emissions, 25 percent of PM2.5, and 33 percent of NOx from on-road cars and trucks. Furthermore, tractors play an outsized role in contributing pollution to communities already overburdened by air pollution and most vulnerable to climate change impacts.



Source: Advanced Clean Fleets Rule, Initial Statement of Reasons

As seen in the graphic above, tractors constitute nearly half of vehicles subject to the High Priority Fleets category.⁴⁰ Since tractors represent an outsized share of the regulated fleets, CARB must focus on transitioning more of these vehicles sooner.

While the ACF rule's drayage requirement addresses port and railyard tractor operations, tractors not visiting these facilities either fall under the High Priority Fleets requirement or remain unregulated by

³⁷ See Attachment E

³⁸ See Attachment H

³⁹ E. Robo, n. 3

⁴⁰ ISOR pg. 64

the rule. Further, under the proposed High Priority Fleet requirements, Class 8 sleeper cab tractors are on an unnecessarily delayed transition timeline, especially given the IRA’s purchase incentives.⁴¹ Targeting tractors for more rapid electrification must be a central focus of the final rule and will provide significant near-term public health benefits. To do so, CARB should accelerate the High Priority Fleet milestone dates for sleeper cab tractors and lower the High Priority Fleet threshold to 10 or more vehicles for all Class 7 and 8 tractors.

2a. Begin High Priority Fleet Sleeper Cab Tractor Electrification in 2027

The current Staff proposal allows High Priority Fleets that choose the ZEV Milestones Option to avoid transitioning any sleeper cab tractors until 2030. This is an unnecessary delay. Given the current pace of innovation, coming vehicle offerings, the normal replacement rate of older trucks, and compliance flexibilities, fleets should be able to meet the initial 10 percent zero-emission sleeper cab tractor requirement in 2027.

Nearly a third of California’s sleeper cabs travel on average less than 300 miles per day,⁴² meaning long-range batteries are not required to begin electrifying a significant portion of these tractors, making them well suited for electrification. Moreover, moving sleeper cabs from Group 3 to Group 2 does not mean 10 percent of sleeper cabs will need to be electrified in 2027. Fleets can choose which trucks to electrify under the ZEV Milestones Option, regardless of what type of tractor is used.

Moreover, heavy-duty regional haul tractors from five different manufacturers are either in use, in serial production, or slated for delivery in 2022: BYD 8TT Tractor (in use),⁴³ Peterbilt Model 579EV,⁴⁴ Volvo VNR Electric (in use),⁴⁵ Freightliner eCascadia (in use),⁴⁶ and Nikola TRE BEV.⁴⁷ Additionally, Tesla’s 500-mile range Semi is now in production, with initial deliveries scheduled for December 1, 2022, to PepsiCo in Modesto and Sacramento.⁴⁸

Because many of these sleeper cab tractors operate the same way as day cabs, CARB should require all of these tractors to be on the same schedule and to begin transitioning to zero emissions in 2027. Failing to treat tractors equally could create a perverse incentive for fleets to replace day cabs with sleeper cabs to delay compliance deadlines.

Table 2: High Priority and Federal Fleet ZEV Phase-In Schedule

Group	Percentage of Fleet that Must be ZEVs	10%	25%	50%	75%	100%
1	Box trucks, vans, two-axle buses, yard trucks, light-duty delivery vehicles	2025	2028	2031	2033	2035
2	Work trucks, day cab tractors, three-axle buses	2027	2030	2033	2036	2039
3	Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042

Source: *Advanced Clean Fleets Rule, Initial Statement of Reasons*

⁴¹ See Attachment E

⁴² California Air Resources Board, Large Entity Reporting Data (2021) <https://ww2.arb.ca.gov/ourwork/programs/advanced-clean-trucks/large-entity-reporting>

⁴³ <https://en.byd.com/truck/class-8-day-cab/>

⁴⁴ <https://www.peterbilt.com/about/news-events/news-releases/peterbilt-model-579EV-now-available-for-customer-orders>

⁴⁵ <https://www.volvotrucks.us/trucks/vnr-electric/>

⁴⁶ <https://freightliner.com/trucks/ecascadia/>

⁴⁷ <https://nikolamotor.com/tre-bev>

⁴⁸ <https://www.tesla.com/semi> Musk says Pepsi to receive Tesla's first Semi trucks in December | Reuters; PepsiCo confirms Tesla Semi truck deliveries to start in December | Reuters

2b. Lower the High Priority Fleet Threshold to 10 Vehicles for Class 7 and 8 Tractors

Fleets of Class 7 and 8 tractors are fundamentally different, in operation and impact, from other MHDV fleets and should be given separate considerations and requirements under the rule. Lowering the threshold for Class 7 and 8 tractor fleets from 50 to 10 is estimated to deliver significantly greater climate and air quality benefits and address critical labor concerns while avoiding burdens for small businesses and undue implementation costs.

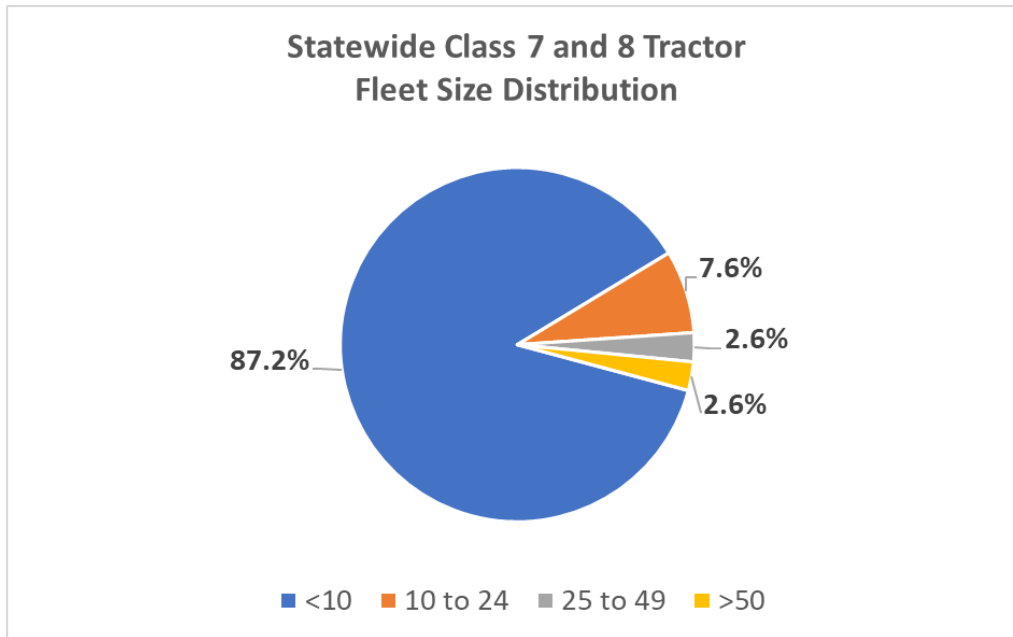
Lowering the High Priority Fleet Threshold to 10 or more tractors would provide roughly an additional 15 percent reduction in GHG, PM2.5, and NOx emissions from the statewide fleet of tractor trucks.⁴⁹ Given that these trucks are responsible for around half of all GHG, PM2.5, and NOx emissions from the state's fleet of trucks and buses, this translates to a significantly more effective regulation while avoiding impacts to the smallest fleets. This is especially impactful for frontline communities disproportionately burdened by pollution from drayage vehicles that may not directly serve a port or railyard.

Class 7 and 8 Tractor Threshold	% GHG Covered	% PM Covered	% NOx Covered
50	75%	70%	70%
25	81%	77%	77%
10	88%	86%	86%

Source: UCS analysis of ARBER data

Fleets greater than 10 are estimated to be responsible for nearly 90 percent of GHGs, PM2.5, and NOx emitted by Class 7 and 8 tractors but represent just 13 percent of all tractor fleets. A lower numeric compliance threshold for tractors would increase the number of fleets regulated under the rule but represents an excellent return on investment for CARB staff.

⁴⁹ See Attachment F: "ACF Threshold Analysis Memo" completed by Union of Concerned Scientists staff using ARBER data



Source: UCS analysis of ARBER data

A lower tractor threshold would also mitigate continued driver misclassification in fleets from 10 to 50 by bringing them under the “ownership and controlling interest” definition CARB included in the proposed regulation. As members of our coalition from the labor community detailed to CARB in previous letters (see Attachment B), legitimate (i.e., properly classified) independent contractors cannot own and operate more than a handful of trucks (i.e., 4-5) and therefore would not be affected by lowering the fleet threshold to 10 trucks. In California, as in much of the rest of the US, there is a large segment of for-hire trucking operations (approximately 30 percent by truck count) between five trucks and thousands of trucks that engage independent contractors to perform the work of a company in functional control of the business. These trucking operations work on the misclassification business model, mixing functional control of a larger entity with the deceptive engagement of drivers as 1099 contractors.⁵⁰ Lowering the threshold to 10 will not harm small fleets and those of “independent owners and operators” since these fleets typically have five or fewer vehicles.

By holding companies to account, directing investment to companies that do not misclassify, and educating drivers on their rights, CARB will create important industry structures that incentivize companies to absorb costs, reduce the incentive to misclassify, empower drivers to resist exploitation, and close escape hatches for misclassifying companies to push costs and responsibilities onto drivers. Alternatively, if the cap remains at 50 trucks, misclassifying companies will resize and relocate their operations (such as into transloading and cross-docking operations) to perpetuate the current business model. Such avoidance strategies are functionally impossible with a lower fleet size cap.

Implementing a lower fleet threshold for Class 7 and 8 tractors can be straightforward and lead to a relatively small increase in regulated fleets. If CARB requires additional administrative support, Staff

⁵⁰ UCB Labor Center, Truck Driver Misclassification (2019). <https://laborcenter.berkeley.edu/pdf/2019/Truck-Driver-Misclassification.pdf>

could consider a fee to fund regulatory implementation similar to the structure used in the Transportation Refrigeration Unit rule.

3. Support for Strong State and Local Government and Drayage Fleet Rules

The coalition commends CARB for the strong standards incorporated for drayage and state and local government fleets. The drayage requirement will provide direct and near-term air quality benefits to communities near port infrastructure. CARB Staff estimates that over 33,000 drayage trucks service California seaports and intermodal railyards annually. Making these trucks zero-emission will address part of the air quality issues that plague communities around seaports and intermodal rail yards. The same goes for state and local governments: electrifying government vehicles on the proposal's timeline will provide essential public health protection by reducing hospitalizations for heart and lung-related causes, decreasing ER visits, and reducing incidences of asthma. Additionally, CARB has done great work so far to define "controlling companies" to assign financial responsibility to misclassifying "controlling" firms, not the drivers they control.

Responding to Alternative 2 Concerns

Despite the massive benefits and feasibility of the stronger standards outlined in Alternative 2, Staff proposed rejecting the alternative. The rationale offered, and echoed by some stakeholders, is not supported by detailed evidence and relies on broad and generally unsupported concerns. The following are responses to chief reasons for rejecting Alternative 2 that provide further justification for adopting the Accelerated ZEV Transition.

1. Feasibility of the 2036 100 Percent Sales Target

Concern: Critical regional corridor infrastructure is unavailable, and higher incremental upfront costs for ZEVs compared to ICE vehicles will not be overcome until 2040.

Response: Regional and national charging corridor concerns do not account for passage of the IIJA and IRA, and the radically reshaped landscape created by new federal funding. The federal government has approved California's proposal under the National Electric Vehicle Infrastructure program, and there is reason to believe those investments will increase substantially over the next five years. Indeed, Governor Newsom recently signed a statement of cooperation intended to accelerate the development of the West Coast zero-emission truck corridor within ten years. In addition, new announcements of private investments in charging corridors continue to accumulate but are omitted from the ISOR.⁵¹

Setting aside whether purchase price or TCO is the appropriate point of comparison, as referenced previously, analysis shows that new federal incentives cause upfront purchase price for MHD ZEV to be lower than the purchase price for diesel trucks in every vehicle category well before 2036.⁵² Notably, the ISOR's rejection of the 2036 100 percent sales target is not based on concerns around the availability of zero-emission trucks: "the 2036 timeframe does provide time for ZE solution [to challenging use cases] to be identified".⁵³

⁵¹ See Attachment C, National Charging Infrastructure to Support Long-haul Operations

⁵² See Attachment E

⁵³ ISOR at 254

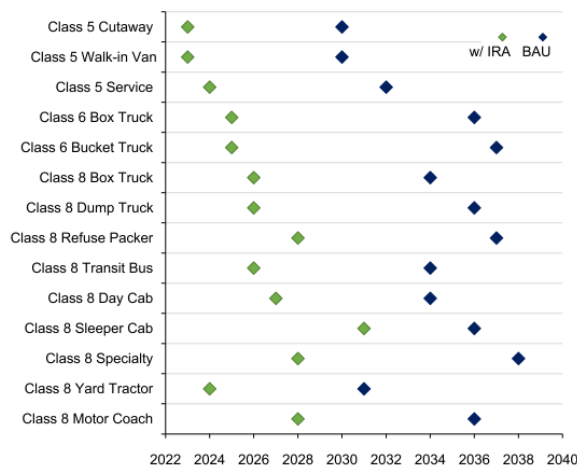
Manufacturers will be able to electrify all new trucks by 2036, and requiring them to do so will provide greater health and economic benefits while avoiding the creation of supply and demand imbalances and excessive ACT rule credit surpluses.

2. Small Business Impact

Concern: Alternative 2 would immediately bring in a wide range of smaller businesses that could have less access to capital versus larger fleets and might face difficulty making the needed investments in ZEVs and infrastructure.

Response: ZEV tractors are competitive due to the substantial fuel and maintenance cost savings, and the TCO is expected to be about half of that for a comparable diesel tractor by 2035.⁵⁴ CARB's analysis shows the up-front cost difference for a battery electric tractor is only about 25 percent more in 2025.⁵⁵ Importantly, the ISOR does not include the significant resources unlocked in the IRA, including up to \$40,000 in vehicle tax credits and a 30 percent credit (up to \$100,000) for the cost of charging infrastructure. Factoring in the IRA tax credits, a Class 8 specialty truck is expected to reach cost parity with its diesel counterpart by 2028.⁵⁶ With the IRA ZEV credit, all vehicles will reach purchase price parity by 2031, with 9 of the 14 vehicle categories reaching parity by 2027, when the Group 2 and 3 ZEV Milestone schedule begins in Alternative 2. To the extent smaller businesses are considering buying new (or used) Class 7 and 8 tractors after 2027, the economics will favor purchasing zero-emission options.

Figure 1. Year purchase price parity is achieved for a range of types of ZEVs compared to internal combustion vehicles for business-as-usual and with the IRA



Source: ERM, Investment Reduction Act Supplemental Assessment: Analysis of Alternative MHD ZEV Business-as-Usual Scenarios

It is also important to keep financing concerns in perspective. First, considerable capital asset differences exist to secure financing between a fleet of 10 cargo vans and a fleet of 10 Class 7 and 8 tractors. For example, in CARB's recent Voucher Incentive Program proposal, the agency used 10 trucks as the cutoff for those fleets deserving of incentive assistance.⁵⁷ Second, a lower fleet size corresponds

⁵⁴ Goldman School of Public Policy: University of California Berkeley, 2035 Report (2021) <https://www.2035report.com/transportation/>

⁵⁵ ISOR, Appendix G

⁵⁶ See Attachment E at 4

⁵⁷ https://ww2.arb.ca.gov/sites/default/files/2022-09/DRAFT_2023_VIP_Guidelines_091622_0.pdf

with a smaller purchase requirement. These smaller fleets will be able to meet percentage targets with only a small number of tractors or can comply through the rule’s alternative pathway by replacing older trucks only as needed with zero-emission ones. The issue, therefore, is about financing the purchase of one to a small number of zero-emission trucks. Finally, it is odd to point to financing and access to capital as a barrier to complying with stronger standards that will not take effect until 2027, when CARB is required by law to develop financing tools to be available to operators of MHD fleets by January 1, 2023.⁵⁸

Concern: Smaller fleets are more likely to purchase used vehicles. ZEVs may not enter the used truck market fast enough for smaller fleets to meet Alternative 2’s accelerated time frame.

Response: The ISOR analysis assumes lower thresholds for all truck fleets and changes to the timelines for both Group 2 and 3 trucks. Commenters’ proposal would not change any requirements affecting fleets until 2027, and then only those fleets with 10 or more Class 7 and 8 tractors.

While the purchasing behaviors of these tractor fleets are unclear, assuming some rely on purchasing used diesel trucks, the economics suggest those fleets would see significant savings if they switched from purchasing used diesel vehicles to purchasing new zero-emission tractors. Today, the TCO for buying a new electric day cab tractor is lower than that for a comparable used diesel. Consequently, smaller fleets accustomed to only buying used diesel vehicles will experience lower TCO costs by purchasing a new electric truck. The electric day cab will save \$170,893, or 30 percent, over the TCO of a used diesel tractor when including the new \$40,000 Federal Tax Credit provided through the IRA.⁵⁹ The table below explains the TCO difference between a used diesel and an electric day cab tractor. The conservative estimate of 33 percent EVSE (charging infrastructure) cost savings reflects the substantial state and federal programs to pay for charging infrastructure excluded from Staff’s TCO study. Including these additional savings, the electric day cab’s TCO is \$231,822, or 41 percent less than the used diesel.

Total Cost of Ownership Comparison Between Used Diesel and Electric Day Cab				
	Used Diesel	Battery Electric	Savings	Savings %
TOTAL	\$ 571,496	\$ 440,603	\$ 130,893	23%
Less Federal Tax Credit		\$ (40,000)		
GRAND TOTAL - with Fed Credit		\$ 400,603	\$ 170,893	30%
Less 33% of EVSE costs		\$ (60,929)		
GRAND TOTAL - with Fed Credit and EVSE Savings		\$ 339,674	\$ 231,822	41%

Source: Attachment D

3. ZEV Markets

Concern: Market forces must be considered in expanding the early ZEV market. The ACT rule guarantees a supply of ZEVs in the California market. However, Alternative 2 would result in a fast ramp-up of additional ZEV demand significantly above the expected supply of ZEVs that may put upward pressure on vehicle prices. Market dynamics concentrated in the hands of consumer fleets would help maintain downward price pressures and bring ZEV costs in line with other technologies sooner.

⁵⁸ Health & Safety Code section 44274.12(a)(13) (SB372(Leyva))

⁵⁹ See Attachment D

Response: As noted above, Commenters' proposal would not change any requirements in effect before 2027, so much of the concerns about rapid expansion, learning, and market imbalances are irrelevant. There should be considerable confidence in the market and its ability to ramp up over the next five years before the first increment of Class 7 and 8 tractor purchases would be required. The market is rapidly expanding, with large orders already being placed – Sysco letter of intent for 800 Freightliner eCascadia Class 8 Semis from Daimler by 2026⁶⁰; Pride Groups order of 250 ZEVs from Daimler including 200 eCascadia;⁶¹ Performance Teams order of 126 Volvo VNR Electrics.⁶² In terms of a varied supply of ZEVs, in addition to historical competition between the ten big OEMs making nearly all semis and chassis for other vehicles, there are an additional 40 new entrant OEMs that only make ZEVs and will significantly increase the competition with legacy OEMs to keep prices competitive. Tesla is an excellent example of this with its new Semi 500-mile semi currently priced at \$180,000,⁶³ which would provide significant competition to legacy OEMs charging considerably more than that for their ZEVs. Additionally, if there are concerns with market forces, the solution should be to revisit and strengthen the ACT rule rather than adopt a weak ACF rule that will not allow us to meet our climate and clean air targets.

4. Charging Infrastructure

Concern: Earlier requirements for sleeper cab tractors raise feasibility concerns regarding publicly available infrastructure, as fleets operating these vehicles are more likely to rely on public networks.

Response: Concerns over sleeper cabs are unsupported by the data. As noted above, nearly one-third of sleeper cabs see average daily trips of less than 300 miles. Many trucks in local and regional operations are old sleeper cabs that no longer perform long-haul operations. This reality, combined with the fact that Commenter's proposal does not specifically require electrification of sleepers but leaves the choice to fleet operators to decide which 10 percent of its fleet should transition to zero-emissions, means it is highly unlikely that an extensive public charging network would be required by 2027 when the first increment of zero-emission purchases would be required. But even if some long-haul trucks (or fleets with no access to depot or destination charging) were captured by the proposed changes, there is every reason to believe these issues can be addressed and that sufficient national charging infrastructure will be installed by 2027 to meet these needs. Numerous federal, state, utility, and private charging infrastructure programs exist or are initiating, providing high confidence that publicly available chargers for MHD ZEVs will be available to meet fleet needs.⁶⁴ For example, the IRA contains a \$100,000 incentive for alternative fueling stations for the next ten years.⁶⁵ Additionally, the US Joint Office of Energy and Transportation's approval of California's Deployment Plan for the National Electric Vehicle Infrastructure (NEVI) Program makes an initial \$56 million in funding available to install charging stations throughout

⁶⁰ TankTransport, Sysco Orders 800 Electric Trucks (August 1, 2022) (<https://tanktransport.com/2022/08/sysco-orders-800-electric-trucks/>)

⁶¹ Mark Kane, Pride Group Orders 250 eCascadia And eM2 Electric Trucks (September 05, 2022) <https://insideevs.com/news/608168/pride-orders-ecascadia-em2-electric-trucks/>

⁶² Volvo Trucks USA, Performance Team Scales Volvo VNR Electric Fleet, Supported by TEC Equipment (October 6, 2022) <https://www.volvotrucks.us/news-and-stories/press-releases/2022/october/performance-team-scales-volvo-vnr-electric-fleet-supported-by-tec-equipment/>

⁶³ Jorge Aguirre, Tesla Semi to Have 500 Mile Range, To Be Delivered This Year (August 10, 2022) <https://www.notateslaapp.com/news/909/tesla-semi-to-have-500-mile-range-to-be-delivered-this-year#:~:text=The%20company%20has%20not%20said,%24150%2C000%20and%20%24180%2C000%20USD%20respectively.>

⁶⁴ See Attachment C for a compendium of planned or ongoing public and private charging solutions.

⁶⁵ "Text - H.R.5376 - 117th Congress (2021-2022): Inflation Reduction Act of 2022." *Congress.gov*, Library of Congress, 16 August 2022, <http://www.congress.gov/>.

the state. MHD infrastructure needs are expected to be included in the subsequent four years of this five-year \$384 million program for California.⁶⁶

Aside from funding, Governor Newsom recently signed AB 2700 to enable more-strategic grid planning and investment to accommodate future EV charging needs.⁶⁷ The bill requires state agencies to collaborate in gathering and sharing fleet data for on-road and off-road MHDVs with electric utilities and directs utilities to conduct strategic grid planning and investment to ensure the grid is proactively prepared to accommodate all the new electric cars and trucks coming over the next decade. To maximize AB 2700's value, CARB should collect and share information from fleets related to vehicle type, number of vehicles, fuel type/charging type, locations (where vehicles are domiciled), operational profile, and timeline. This will be especially helpful for avoiding infrastructure bottlenecks in areas with high concentrations of MHD ZEVs, avoiding delays and costly upgrades done on an emergency basis that could otherwise frustrate electrification.⁶⁸

The Governor also just signed a Statement of Cooperation with Oregon, Washington, and British Columbia to advance the creation of a MHD ZEV corridor along I-5 from Southern California to British Columbia within the next ten years.⁶⁹ It is odd to justify the rejection of health and economically beneficial and otherwise feasible alternatives by pointing to barriers California has committed to addressing.

Attachment C expands on the activity underway in California and nationally to meet the charging needs of a more ambitious ACF rule. Some highlights include:

- Daimler, NextEra Energy, and Blackrock signed a memorandum of understanding (MOU) making an initial commitment of \$650 million to build a publicly available national MHD charging network beginning in 2023, with the first phase to include major corridors along the West Coast, East Coast, and Texas by 2026.⁷⁰
- Volvo Trucks is building a MHD charging network project in California, funded partly with a \$2 million CEC grant.⁷¹
- The National Association of Truck Stop Operators (NATSO) signed an MOU with ChargePoint to secure \$1 billion in funding to install charging infrastructure at up to 4,000 truck stops nationally by 2030.⁷²

⁶⁶ David Worford, 35 States Approved to Receive First Round of EV Charging Funds (September 15, 2022) <https://www.environmentalleader.com/2022/09/35-states-approved-to-receive-first-ev-charging-funds/>

⁶⁷ Transportation Electrification: Electrical Distribution Grid Upgrades, Cal. Assemb. B. 2700 (September 16, 2022), Chapter 354 https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB2700

⁶⁸ Muller, Miles. "Newsom Signs Law to Ready the Grid for EV Adoption." *NRDC*. 2022 <https://www.nrdc.org/experts/miles-muller/newsom-signs-law-ready-grid-ev-adoption>

⁶⁹ <https://www.gov.ca.gov/wp-content/uploads/2022/10/10.6.22-PCC-Statement-of-Cooperation.pdf?emrc=7eeeee>

⁷⁰ Daimler Truck North America, Daimler Truck North America, NextEra Energy Resources and BlackRock Renewable Power Announce Plans to Accelerate Public Charging Infrastructure for Commercial Vehicles Across the U.S. (January 31, 2022)

<https://northamerica.daimlertruck.com/PressDetail/daimler-truck-north-america-nextera-energy-2022-01-31>

⁷¹ Scooter Doll, Volvo Trucks to Construct Charging Network Throughout California (July 14, 2022) <https://electrek.co/2022/07/14/volvo-trucks-charging-network/>

⁷² NATSO, ChargePoint and NATSO Launch Collaborative to Significantly Expand EV Charging Along Nation's Highways and in Rural Communities (February 6, 2020) <https://www.chargepoint.com/about/news/chargepoint-and-natso-launch-collaborative-significantly-expand-ev-charging-along>

- The Megawatt Charging System (MCS) standard will be in place beginning in 2024 and can charge a fully loaded Class 8 long-haul tractor in 30 minutes.⁷³

Conclusion

The ACF rule will provide overwhelming public health, economic, and climate benefits. Many elements of the current proposal are sufficiently strong and must be retained, particularly the drayage and public fleet requirements and commitment to only allow zero-emission technology for compliance. Despite these strong elements, more can and should be done. Even with Alternative 2, the ACF rule will not guarantee the level of ZEV deployments necessary to achieve our objectives: to clean up air pollution and slow climate change. However, directing Staff to include our changes is a necessary step to bridge that gap and add momentum to the ongoing ZEV transition.

Sincerely,

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⁷³ Mark Kane, CharIN Officially Launches the Megawatt Charging System (MCS) (June 15, 2022) <https://insideevs.com/news/592360/megawatt-charging-system-mcs-launch/>

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List of Attachments:

Attachment A: [Follow-Up Resources Supporting a 100% Sales Target in 2036](#)

Attachment B: [Labor Recommendations to CARB Concerning the Advanced Clean Fleets Rule](#)

Attachment C: [Medium- and Heavy-Duty EV Charging Infrastructure Sufficiency to Support A More Ambitious Advanced Clean Fleets Rule](#)

Attachment D: TCO Comparison Between New Diesel and Used Electric Day Cab

Attachment E: [Investment Reduction Act Supplemental Assessment: Analysis of Alternative MHD ZEV Business-as-Usual Scenarios](#)

Attachment F: [“ACF Threshold Analysis Memo” completed by Union of Concerned Scientists staff using ARBER data](#)

Attachment G: [California Clean Trucks Program: An Analysis of the Impacts of Low NOx and Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy](#)

Attachment H: *Preliminary Findings*, Inflation Reduction Act 2022 Impact Study, Roush