

State of California

CALIFORNIA AIR RESOURCES BOARD

ADVANCED CLEAN TRUCKS REGULATION

FINAL STATEMENT OF REASONS

MARCH 2021

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Table A: Acronyms

Acronym	Definition
AB	Assembly Bill
ABT	Averaging, Banking, and Trading
ACT	Advanced Clean Trucks
AER	All-Electric Range
ASB	Airport Shuttle Bus
CAA	Clean Air Act
CARB or Board	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CNG	Compressed Natural Gas
COVID	Coronavirus Disease
CPUC	California Public Utilities Commission
CTA	California Trucking Association
DMV	Department of Motor Vehicles
EA	Environmental Analysis
EER	Energy Economy Ratio
EMA	Engine Manufacturer's Association
EMFAC	Emission Factors
EPA	Environmental Protection Agency
ePTO	Electric Power Take-Off
EVSE	Electric Vehicle Supply Equipment
FCEV	Fuel Cell Electric Vehicle
FSOR	Final Statement of Reasons
GHG	Greenhouse Gases
GVWR	Gross Vehicle Weight Rating
H&SC	Health and Safety Code
HD	Heavy-Duty
HEV	Hybrid Electric Vehicle
HVIP	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project
ICT	Innovative Clean Transit
IOU	Investor Owned Utilities
IRP	International Registration Plan
ISOR	Initial Statement of Reasons
LCFS	Low Carbon Fuel Standard
LD	Light Duty
LNG	Liquefied Natural Gas
MD	Medium-Duty
MDPV	Medium-Duty Passenger Vehicle
MHD	Medium-Heavy-Duty
MY	Model Year

Acronym	Definition
NAAQS	National Ambient Air Quality Standards
NG	Natural Gas
NGV	Natural Gas Vehicle
NOx	Oxides of Nitrogen
NZEV	Near-Zero-Emission Vehicle
OEM	Original Equipment Manufacturer
PHEV	Plug-In Hybrid Electric Vehicle
PM	Particulate Matter
POU	Public Owned Utilities
PZEV	Particle Zero-Emissions Vehicle
RD	Renewable Diesel
RNG	Renewable Natural Gas
SB	Senate Bill
SIP	State Implementation Plan
SRIA	Standardized Regulatory Impact Assessment
TCO	Total Cost of Ownership
TRUCRS	Truck Regulation, Upload, and Compliance Reporting System
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
ZANZEFF	Zero- and Near-Zero-Emission Freight Facilities
ZE	Zero-Emission
ZEP	Zero-Emission Powertrain
ZEV	Zero-Emission Vehicle

State of California
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response

PUBLIC HEARING TO CONSIDER THE PROPOSED ADVANCED CLEAN TRUCKS
REGULATION

Public Hearing Dates: December 12, 2019, and June 25-26, 2020

Agenda Item No.: 20-6-3

I. GENERAL

ACTION TAKEN IN THIS RULEMAKING

The Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report) entitled "The Proposed Advanced Clean Trucks Regulation," and its supporting Appendices A through J, all of which were publicly released October 22, 2019 for a 45-day comment period, are incorporated by reference herein and contain a description of the rationale and supporting documentation for the proposed regulation. On October 22, 2019, all references relied upon and identified in the Staff Report were made available to the public.

Zero-emission (ZE) technologies are necessary to address the state's long-term air quality and climate protection goals. These technologies are part of a comprehensive strategy to reduce emissions from the transportation sector as reflected in the 2016 Mobile Source Strategy.

As explained in the Staff Report, the purpose of these regulations is to accelerate the market for zero-emission vehicles in the medium- and heavy-duty truck sector and to reduce emissions of oxides of nitrogen (NO_x), fine particulate matter (PM), toxic air contaminants, greenhouse gases (GHG), and other criteria pollutants generated from on-road mobile sources. Requiring medium- and heavy-duty vehicles to transition to zero-emissions technology will reduce health risks to people living in and visiting California, and is needed to help California meet established near- and long-term air quality and climate mitigation targets. Requirements for fleets to report information about their operations will provide data needed to inform future strategies and policies.

On December 12, 2019, following a 45-day comment period, the California Air Resources Board (CARB or Board) conducted the first public hearing to consider the proposed Advanced Clean Trucks Regulation (ACT), as described in the Staff Report, and the

associated Notice of Public Hearing (45-Day Notice). The regulation requirements are included in title 13, division 3, chapter 1, article 2, sections 1963-1963.5, and in title 13, division 3, chapter 1, new article 3.1, sections 2012-2012.3 of the California Code of Regulations. At this public hearing, staff presented the proposal as well as additional suggested modifications to the regulatory text to address comments received following the release of the Staff Report. At the conclusion of the hearing, the Board directed the Executive Officer and staff to consider the testimony and comments received and to continue working with stakeholders to address concerns about the proposed requirements.

A total of 121 written comment letters were received from individuals or organizations throughout the 45-day period. During the December 12, 2019, public hearing, 16 written comments were received along with 99 individuals who gave oral statements. Staff then proposed modifications to the original regulation addressing comments received during both the public hearing and 45-day comment period.

The text of the proposed modifications to the originally proposed regulation and supporting documents were made available for a supplemental 30-day comment period through a "Notice of Public Availability of Modified Text and Availability of Additional Documents" (30-Day Notice). The 30-Day Notice, modified regulatory language, and additional supporting documents were posted on April 28, 2020, on CARB's website ([Link](#)), accessible to stakeholders and interested parties. The comment period commenced on April 28, 2020 and ended on May 28, 2020 with a total of 342 comment letters received during this time. All modifications to the regulatory language are clearly indicated in the Notice of Public Availability of Modified Text.

The Final EA and written responses to the Draft Environmental Analysis (EA) were both posted on June 23, 2020 for public review.

The Final EA, Response to Comments, Final Regulation Order, and Proposed Resolution 20-19 were presented to the Board during the June 25, 2020 hearing, during which oral comments from 136 individuals and 114 written comments were received. The Board adopted Resolution 20-19 which approved written responses to the Draft EA, certified the Final EA, approved the findings, approved the statements of overriding considerations, and adopted the ACT Regulation. The June 2020 approval by itself did not and could not have resulted in any environmental impacts because the ACT Regulation will not go into effect until after the Office of Administrative Law approves it. In other words, although CARB complied with CEQA by completing environmental review prior to the Board's June 2020 approval, CARB still had to comply with additional APA requirements before the ACT Regulation rulemaking process could be concluded. Note: a clerical error occurred in the Final EA. The emissions benefits tables on pages 35 and 55 in the Final EA do not match up with the updated emissions benefits in Attachment C to the Notice of Public Availability of Modified Text and Availability of Additional Documents and Information, posted on CARB's website on April 28, 2020. This is the result of a minor clerical oversight in not transferring the new numbers from

Attachment C, which reflect the emissions benefits from the modified language identified in the April 28, 2020 notice, to the Final EA. The new emissions benefits result in greater benefits and, as a result, do not change any of the significance conclusions or determinations made in the Final EA for which the Board took action to certify. And the Board was provided with the updated numbers before the June 25th approval (Attachment C: “Updated Costs and Benefits Analysis for the Proposed Advanced Clean Trucks Regulation”).

In Resolution 20-19, the Board directed the Executive Officer to “take CARB’s final step for final approval of the Board-approved regulations” and submit the rulemaking package to the Office of Administrative Law if the Executive Officer determines no additional modifications to the regulations are appropriate. The Executive Officer determined that no additional modifications to the regulatory language are necessary, but CARB did add some documents to the rulemaking record. A list of supporting documents added to the record was made available for a supplemental 15-day comment period through a “Second Notice of Public Availability of Additional Documents and Information” (15-Day Notice). The 15-Day Notice and additional supporting documents were posted on October 5, 2020, on CARB’s Website ([Link](#)), accessible to stakeholders and interested parties, and ended on October 20, 2020, with 8 comments received during this period.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulation, including changes directed by the Board at the December 12, 2019, hearing and text circulated for public comment during the 30-day comment period. The FSOR also contains a summary of the comments received during the formal rulemaking process by CARB on the proposed ACT Regulation or on the process by which they were adopted as well as CARB's responses to those comments.

MANDATES AND FISCAL IMPACTS TO LOCAL GOVERNMENTS AND SCHOOL DISTRICTS

The Board has determined that this regulatory action will not result in a mandate to local school districts but will to local agencies. However, the Board finds that the costs to local agencies are not reimbursable pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code. Pursuant to Government Code sections 11346.9(a)(2) the proposed regulatory action is a mandate that would create costs and cost-savings to local agencies, but not to school districts. The mandate is not reimbursable because costs associated with the proposed regulation apply generally to all entities that purchase affected vehicles and respond to the reporting requirement, including local agencies. Therefore, the regulation does not constitute a "Program" imposing any unique requirements on local agencies as set forth in section 17514 of the California Government Code.

The ACT Regulation directly impacts local government entities, who are local agencies. In 2021, each of the 58 counties and 482 cities in California would be required to complete the Large Entity Reporting requirement to report information about their fleets and the type of transportation services for which they contract.

Many cities and counties in California levy a Utility User Tax on electricity usage. This tax varies from city to city and ranges from no tax to 11 percent. A value of 3.53 percent was used in this analysis representing a population-weighted average (SCO, 2016).¹ By increasing the amount of electricity used, there will be an increase in the amount of the utility user tax revenue collected by cities and counties.

Fuel taxes on gasoline and diesel fund transportation improvements at the state, county, and local levels. Displacing gasoline and diesel with electricity and hydrogen will decrease the total amount of gasoline and diesel dispensed in the state, resulting in a reduction in fuel tax revenue collected by local governments.

Sales taxes are levied in California to fund a variety of programs at the state and local level. The ACT Regulation will require the sale of more expensive zero-emission trucks in California which will result in a direct increase in sales tax revenue collected by local governments. However, local sales tax revenue may increase less than the direct increase from vehicle sales if overall business spending doesn't increase.

The local government fleet is estimated to make up 2.9 percent of California's total fleet based on information from manufacturers and the Department of General Services. A proportionate amount of the total costs are assumed to pass-through to local governments.

The estimated fiscal impacts to local government compared to a business as usual baseline are estimated at -\$0.6 million over the first three years of the regulation and \$4 million over the regulatory lifetime.

CONSIDERATION OF ALTERNATIVES

Government Code section 11346.9(a)(4) requires that CARB consider reasonable alternatives which “include, but are not limited to, alternatives that are proposed as less burdensome and *equally effective in achieving the purposes of the regulation* in a manner that ensures full compliance with the authorizing statute or other law being implemented or made specific by the proposed regulation.” (emphasis added) For the reasons set forth in the Staff Report, in staff’s comments, responses at the hearing, and in this FSOR, the Board determined that no alternative considered by the agency would be equally effective in achieving the purpose for which the regulatory action was proposed, or would be as effective and less burdensome to affected private persons, or

¹ (SCO, 2016) California State Controller's Office, User Utility Tax Revenue and Rates (web page: [https://sco.ca.gov/Files-ARD-Local/LoSCzrcRep/2016-17 Cities UUT.pdf](https://sco.ca.gov/Files-ARD-Local/LoSCzrcRep/2016-17%20Cities%20UUT.pdf), last accessed June 2019).

would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board. The ACT regulation ISOR included the following primary purposes for adoption of the regulation:

- Accelerate first wave of zero-emission (ZE) truck deployments in best suited applications;
- Achieve 100 percent zero-emission pickup-and-delivery in local applications by 2040;
- Support the Ports of Los Angeles and Long Beach Clean Air Action Plan for 100 percent zero-emission drayage trucks by 2035;
- Support AB 739 requiring California state government fleets to purchase ZEVs;
- Enable a large-scale transition to zero-emission technology;
- Maximize the total number of ZEVs deployed;
- Complement existing and future programs;
- Provide environmental benefits, especially in disadvantaged communities thereby supporting the implementation of AB 617;
- Ensure requirements are technologically feasible and cost effective; and
- Foster a self-sustaining zero-emission truck market.

1. Less Stringent ZEV Sales Requirement

This alternative proposes a less stringent zero-emission vehicle (ZEV) sales requirement than the ACT regulation and would apply to the same manufacturers. Under this alternative, three percent of regulated manufacturer sales would need to be ZEVs in Class 2b-7 ramping up to 15 percent in 2030. Class 2b-3 pickup trucks and all Class 8 vehicles would be excluded from the ZEV sales requirement. This alternative would result in fewer ZEV sales compared to the ACT regulation and would be expected to result in lower upfront costs to California due to the reduced ZEV percentage sales requirements on the manufacturers. However, all the required ZEV sales are assumed to be counted towards Phase 2 GHG compliance meaning no additional GHG emissions benefits would be achieved. Therefore, this alternative is rejected because it fails to maximize the number of ZEVs deployed, does not maximize reductions of NO_x, PM_{2.5}, and results in no new GHG reductions.

2. Stricter in Early Years ZEV Sales Requirement

This alternative proposes a more stringent ZEV sales requirement in the early years of the regulatory timeframe than the ACT Regulation and would apply to the same manufacturers. Under this alternative, 15 percent of regulated manufacturer sales would need to be ZEVs in Class 2b-8 ramping up to 40 percent in 2030. This alternative would result in greater ZEV sales compared with the ACT regulation. Furthermore, this alternative assumes that more long-range battery electric vehicles (BEVs) need to be sold in Class 2b-3 and more fuel cell vehicles would need to be sold in the Class 7-8 tractor category. With this alternative, the manufacturer would be required to make more expensive, longer range vehicles and sell more ZEVs in total to meet this higher sales requirement. Even though this alternative results in more ZEVs deployed than the ACT Regulation in the early years of the requirement and could provide more NO_x and PM_{2.5} emission reductions, it raises questions about the feasibility for manufacturers to comply with its requirements since they would need to expand sales for vehicles that are less suitable for early electrification. Therefore, this alternative was rejected due to the uncertainty as to whether the requirements could be met or sustained.

3. ZEV and Low NO_x Credit Policy Approach

The “ZEV and Low NO_x Credit Policy Approach” concept would give credit for combustion vehicles that meet a 0.02 g/bhp-hr NO_x certification standard and use low carbon fuels to count towards the ZEV requirement. This concept is not, functionally, a true alternative to the proposed regulation because it does not propose an alternative to the core element of the ACT regulation which is a ZEV sales requirement. Rather, under this concept, a complementary credit mechanism would be created to allow manufacturers to offset zero tailpipe vehicle manufacturing sales requirements with engines that meet the optional Low NO_x standard until CARB implements a new heavy-duty emission standard for internal combustion engines that achieves similar NO_x reductions. As a matter of policy, this concept simply does not attempt to address the core goal of the ACT regulation which is to accelerate the widespread adoption of ZEVs but is instead an ancillary concept to this core goal of enabling and incentivizing manufacturers to continue to manufacture internal combustion engines.

CARB has separate regulations and rulemakings to address different issues. The purpose of the ACT regulation is to foster and accelerate the large-scale adoption of ZEVs. Separately, CARB is currently developing the Low NO_x Omnibus rulemaking, which, in pertinent part, will ensure that heavy-duty diesel and Otto-cycle engines used in on-road heavy-duty vehicles comply with stringent NO_x emission standards as those engines and vehicles are operated. The Low NO_x Omnibus regulation will establish a new NO_x standard by the 2024 model year, the same year that ACT begins implementation. The Omnibus rulemaking also establishes an opportunity for manufacturers that elect to voluntarily certify engines to more stringent standards than required to generate emissions credits.

CARB also has the Low Carbon Fuel Standard (LCFS) regulation which achieves GHG reductions by requiring fuel producers to reduce the carbon intensity of their fuels or purchase credits from low carbon fuel suppliers. The LCFS program is successfully reducing carbon intensity of California transportation fuels by providing a strong market-based incentive to produce low carbon fuels including electricity, hydrogen, natural gas, and biofuels which can generate credits under that program. LCFS credits can be sold and used to offset the costs of these fuels. Fossil gasoline and diesel are generally not eligible for LCFS credits. Electricity and hydrogen are both low carbon fuels with high Energy Efficiency Ratios (EER) meaning they can generate LCFS credits. Electricity is a relatively inexpensive and efficient way to fuel a vehicle and significant savings can be achieved especially when the LCFS credits are considered. For fleets that charge for extended periods overnight, the LCFS credits can offset all or nearly all of the electricity costs. The LCFS program specifies that emission reductions associated with low carbon fuels are attributed to any regulation that requires the usage of an alternative technology, so the emission benefits of medium- and heavy-duty vehicle electrification are already attributed to the ACT regulation's ZEV requirement, as required under the LCFS program.

Awarding credit to Low NOx engines in this rulemaking under this credit concept would also not achieve all of the primary purposes identified for the ACT regulation as required by Government Code section 11346.2, subsection (b)(4)(A), quoted above.

Notwithstanding the fact that this concept does not meet the bare minimum threshold of being a "reasonable alternative" due to its failure to address the core element of the ACT regulation, the ZEV sales requirement, CARB nonetheless chose to address its shortcomings and reasons for rejecting the credit concept. First, awarding credit to combustion-powered vehicles would incentivize the production of internal combustion engines which is directly inconsistent with the stated goals noted above, especially because it would not achieve maximum emission reductions possible by spurring ZEV production in the heavy and medium duty vehicle categories. Second, and relatedly, this credit concept would have a direct effect in decreasing the number of ZEVs and NZEVs produced in California because manufacturers would likely pursue manufacturing strategies that achieve compliance by simply buying credits to meet the ZEV sales requirement from manufacturers producing combustion vehicles that qualify for the Low NOx credits; this would clearly undermine the goal of accelerating the medium- and heavy-duty vehicle zero-emission market. Third, the proposed credit concept would be duplicative with the Low NOx Omnibus rulemaking and fail to generate additional emissions reductions because the Low NOx Omnibus rulemaking has addressed incentives related to manufacturers' voluntary production of engines that meet this concept's low NOx standard. Fourth, because the actions identified are duplicative with the Low NOx Omnibus rulemaking and the LCFS regulation, this credit concept would generate no criteria or GHG emission benefits which would fail to meet the objective that emission reductions from the ACT regulation are real, permanent, quantifiable,

verifiable, and enforceable. Therefore, this concept fails to meet the purposes of the ACT regulation, including the goal to decrease emissions in conjunction with the state's air quality and climate change targets and is therefore rejected as it would be duplicative with CARB efforts already underway.

4. 200,000 ZEV Sales Requirement by 2030

This alternative concept requires a more aggressive sales percentage requirement that would achieve at least 200,000 ZEVs, or 10 percent of the total truck population, to be on the road by 2030. In general, this alternative raises questions about the feasibility of manufacturers to comply with this alternative especially for Class 2b-3 vehicles and tractors. Both Class 2b-3 and Class 7-8 tractors have more focused concerns about payload, range, towing, charging/refueling infrastructure, and model availability than other vehicles. These issues will present more challenges for their deployment in this early market and suitability. The sheer number of vehicle sales and likelihood that manufacturers would need to produce more costly long-range vehicles means they may need to be placed in applications where they may not be fully suitable. Even though this alternative results in more ZEVs deployed than the ACT Regulation and could provide more NO_x and PM_{2.5} emission reductions, it raises questions about the feasibility for manufacturers to comply with its requirements due to the rapid increase in sales prior to 2030. Therefore, this alternative was rejected due to the uncertainty as to whether the requirements could be met or sustained.

5. Fleet Rule Requirement

This concept would change the point of regulation to fleet owners. As described in the 2016 Mobile Source Strategy, this would require fleets to gradually increase ZEV purchases when replacing vehicles starting in 2020. As explained in the Staff Report, manufacturers have been reluctant to produce medium- and heavy-duty ZEVs. This alternative cannot succeed unless ZEVs are available to purchase and have a robust maintenance support network. CARB initially considered using a fleet regulation to accelerate the market, but later determined that ZEV availability and support was insufficient to meet state commitments. A necessary first step would be to ensure that ZEVs were supported by manufacturers and made widely available before placing requirements on fleets. In fact, the ACT Regulation includes a reporting requirement for large entities and fleet owners to provide information needed to develop future zero-emission fleet rules. The manufacturer ZEV sales requirement needs to be in place first because of the lead time needed to develop and manufacture vehicles. CARB has already begun the process to develop future fleet regulations that can take effect the same year as the first ZEV sale is required. Therefore, this alternative was rejected at this time because a manufacturer sales requirement is necessary to ensure ZEVs are available and fully supported before fleet rules can begin. CARB is already planning to implement complementary ZEV fleet rules in the near future.

6. Truck and Engine Manufacturer's Association Sector Requirement

This concept would require manufacturers to produce and sell one specific model of ZEV for a specific application/use case (e.g., Last-mile delivery, public, utility, drayage, etc.). Under this alternative, beginning in the 2024 model year, one specific vehicle application would be identified by CARB and all manufacturers would need to offer a zero-emission truck that is capable of being used in that application. The concept is that only zero-emission trucks would be sold to fleets that operate a truck in that specific application while other use cases would be unaffected. Manufacturers will be responsible in tracking the usage of trucks under this alternative. Due to ZEVs being the sole replacement for existing vehicles, it is expected that vehicles under the affected use cases would eventually become entirely zero-emission. However, this alternative concept is not feasible in the near-term until available ZEVs or ZEV technology meets all daily needs for every vehicle under the affected use cases. It is also impractical for the manufacturer and CARB to know if the buyer was planning on using the truck in the specified application when the initial purchase was being made. For example, it is impractical to identify whether a new tractor will be used for drayage or another use at the time of purchase and moreover, the owner can change the intended use at any time. In addition, California already requires diverse types of ZEVs under AB739, Innovative Clean Transit (ICT), and Zero-Emission Airport Shuttle Bus (ASB) regulations. State and utility fleets also have a wide variety of truck and use cases, and to discretely define and enforce requirements based on use cases would be impractical. This alternative was dismissed because it would be difficult to realistically implement and does not align with California's goal of maximizing transportation electrification everywhere feasible.

7. Small Business Alternative

Government Code section 11346.9(a)(5) requires a description of reasonable alternatives to the regulation that would lessen any adverse impact on small business as well as the agency's reasons for rejecting those alternatives. CARB staff believe that the ACT Regulation would not result in any unexpected direct cost on small businesses. With high production rates of zero-emission trucks due to the ACT Regulation, there will be many benefits in various businesses, including ZEV manufacturing industries, ZEV components suppliers, electric vehicle supply equipment (EVSE) suppliers and installers, and hydrogen fuel station suppliers. Some of these businesses may fall into the small business category, such as electricians, construction companies (including infrastructure installers), some ZEV manufacturers, fuel cell and battery producers, and electric drivetrain parts and components suppliers.

Based on the thresholds, staff does not foresee that any manufacturers subject to the ZEV sales requirement would be small businesses. Likewise, staff does not foresee that the large entity reporting requirements for any businesses meeting the revenue threshold, fleets meeting the size threshold, or government agencies subject to the

reporting requirement would be small businesses. However, there is the potential that some brokers may qualify as small businesses and may be subject to the large entity reporting requirement. Brokers make up a small percentage of the entities regulated under the ACT Regulation, but their participation in the large entity reporting requirement is fairly unlikely based on the data at hand. Staff estimate that less than one percent of regulated entities are small businesses.

8. Health and Safety Code Section 57005 Major Regulation Alternatives

CARB estimates the ACT regulation will have an economic saving on the state's business enterprises of more than \$5.9 billion between 2020 and 2040. CARB evaluated alternatives submitted by stakeholders to consider whether there are less costly alternatives or combinations of alternatives equally as effective in achieving increments of environmental protection, in full compliance with statutory mandates and within the same amount of time as the proposed regulatory requirements, as required by Health and Safety Code section 57005. Staff reviewed and consolidated alternative proposals submitted to date in Chapter IX, none of which are as equally effective within the same amount of time.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

MODIFICATIONS APPROVED AT THE BOARD HEARING AND PROVIDED FOR IN THE FIRST 30-DAY COMMENT PERIOD

Subsequent to the December 12, 2019, Board hearing, modifications to the original proposal were made at the Board's direction and to address comments received during the 45-day public comment period. CARB staff released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (30-Day Notice)² on April 28, 2020, which notified the public of additional documents added into the regulatory record and presented additional modifications to the regulatory text.

The following is a summary of the changes made to the initial proposal as part of the 30-Day Notice. Staff's proposed modifications to previously proposed adoptions of new sections 1963, 1963.1, 1963.2, 1963.3, 1963.4, and 1963.5, that are to be codified into article 2, chapter 1, division 3, title 13 of the California Code of Regulations, and 2012, 2012.1, 2012.2, and 2012.3, that are to be codified into new article 3.1, chapter 1, division 3, title 13 of the California Code of Regulations, are summarized below. For further detail see Notice of Public Availability of Modified Text and Availability of Additional Documents and Information. Posted on April 28, 2020. Available online at: <https://ww3.arb.ca.gov/regact/2019/act2019/30daynotice.pdf>.

² California Air Resources Board. Notice of Public Availability of Modified Text and Availability of Additional Documents and Information. Posted on April 28, 2020. Available online at: <https://ww3.arb.ca.gov/regact/2019/act2019/30daynotice.pdf>.

Staff proposed changes to increase the number of ZEVs sold by manufacturers in California and to streamline reporting requirements for large fleets as directed by the Board.

For the manufacturer ZEV sales requirement, staff proposed changes to sections 1963 through 1963.5 to strengthen ZEV sales requirements and to provide a clearer market signal on the pathway to reach carbon neutrality by 2045 in California, which is consistent with Board direction and many public comments received for the ACT rulemaking. These changes are critical to California achieving its future ZEV adoption goals and to meet both climate and health-based air quality targets.

Staff proposed increasing the percentage of ZEV sales in California across all vehicle groups from 2024 to 2030 as well as from 2030 to 2035 rather than keeping them constant during that period. Staff also proposed including pickups in the ZEV sales requirement for the Class 2b-3 vehicle group beginning with the 2024 model year, rather than excluding them until 2027. This change will increase the number of ZEVs required to be sold in the Class 2b-3 vehicle group from 2024 through 2026 and is supported by new information in recent market announcements showing that a number of zero-emission pickup and van models will be commercially available from several manufacturers well before the 2024 model year. These changes in the Class 2b-3 vehicle group are necessary to ensure strong market signals for ZEVs produced in this category. Proposed increases in the Class 7 and 8 tractor group sales percentages are necessary to ensure there are sufficient tractor sales to meet the goal of achieving an all zero-emission drayage fleet by 2035 which would directly benefit disadvantaged communities and accelerate the market for tractors. In combination, these changes would increase ZEV sales in all vehicle size categories and would provide a clear path towards achieving carbon neutrality by 2045.

Staff proposed additional flexibilities for manufacturers that produce a small number of tractors each year as well as changes to ZEV and near-zero-emission vehicle (NZEV) credit lifetimes to align credit life for manufacturers with California's Greenhouse Gas Phase 2 regulations. Staff also extended NZEV credit for an additional five years from 2030 to 2035 for NZEVs that achieve more than 75 miles of all-electric range. A number of additional changes, both substantive and non-substantive, were made to clarify definitions, better explain credit accounting and retirement order, and prevent double counting of NZEV credits with the Advanced Clean Cars regulation.

For the large entity reporting requirement, staff proposed changes to sections 2012 through 2012.3 to streamline reporting while ensuring key data are still collected to support future ZEV fleet regulations. The changes would limit the required reporting to vehicle owners and brokers. Staff proposed removing the entirety of originally proposed section 2012.2, which eliminated the requirement to report information about contracting practices, facilities, and truck trip counts. CARB will still seek to gather this information through other means, including a voluntary survey by a third-party contractor.

Staff also proposed lowering the vehicle count threshold for the reporting requirement to fleets with 50 or more trucks and buses rather than the originally proposed 100 vehicle fleet size; this will ensure representative sampling of truck usage across more fleets, which is necessary given the higher ZEV sales proposed. Staff proposed including language that specifies a period of time for entities to respond to staff requests for clarification of apparent anomalies in reported information, to the extent they occur. A number of other changes included adding clarifying definitions, removing references to the sections that were removed, clarifying that personal residence information is not part of the reporting requirement, and adding examples of methods to use with existing data when responding to questions.

These changes are necessary to meet Board direction by strengthening ZEV sales requirements consistent with vehicle availability and technological feasibility. These changes would ensure long-term market signals are in place to help achieve carbon neutrality in California by 2045. Additionally, streamlining and clarifying large entity reporting is necessary to meet Board direction and stakeholder concerns, while ensuring critical information is gathered to support future rulemakings and policy decisions.

UPDATE TO THE INITIAL STATEMENT OF REASONS

In the Initial Statement of Reasons, page 84 (IV-35), the rationale for section 2012.1 errantly referenced sections 2012(b)(12), 2012(b)(13), and 2012(b)(14), The correct sections that should be referenced are sections 2012.1(a)(12), 2012.1(a)(13), and 2012.1(a)(14).

UPDATE TO THE ECONOMIC IMPACT ASSESSMENT IN THE INITIAL STATEMENT OF REASONS

As part of the 30-Day Changes to the regulation, staff released Attachment C: Updated Cost and Benefit Analysis. This attachment reevaluated the emission benefits, climate benefits, health benefits, and economic costs and benefits for the ACT regulation due to the proposed modifications. This document also outlines changes made to the economic analysis for the 30-Day Changes.

ADDITIONAL DOCUMENTS INCORPORATED INTO THE RECORD IN THE SECOND 15-DAY COMMENT PERIOD

Subsequent to the June 25, 2019, Board hearing, additional documents were incorporated into the rulemaking record to further support the rulemaking. CARB Staff released a Second Notice of Public Availability of Documents and Information (15-Day

Notice)³ on October 5, 2020, which notified the public of additional documents added into the regulatory record. No modifications were made to the regulatory text.

NON-SUBSTANTIAL MODIFICATIONS

Subsequent to the 30-day public comment period mentioned above, staff identified the following additional non-substantive changes to the regulation:

1. Section 1963(c)(9). “Pounds” was added after GVWR 26,001 for the definition of Class 7-8 tractor group.
2. Section 1963(d). “The” was corrected to “their” to fix a grammatical error.
3. Section 1963.2(i). Replaced “or” with “and” for consistency with the phrase “produced and delivered for sale” used throughout the regulation. The original regulation text used “produce and deliver” and the notice for the 30 day changes described the modification as using “and” but “and” was inadvertently omitted.
4. Section 1963.5(a)(1). The *Audit of Record* provision was edited to read as “A manufacturer must make records of vehicle sales into California available to the Executive Officer within 30 days of a request for audit to verify the accuracy of the reported information. Submitting false information is a violation of this regulation and violators will be subject to penalty.”
5. Section 2012(b)(5). Deleted “operated in California” to remove duplicative language used earlier in the sentence.
6. Section 2012(c)(2). Deleted the second use of “that” for proper grammar.
7. Section 2012(c)(4). Deleted “or” at the end for proper grammar since subsection (c)(4) is not the second to last in the list.
8. Section 2012(c)(5). Added “; or” at the end of this subsection (and deleted the period) for proper grammar as it is the second to last subsection in the list.
9. Section 2012(d)(2). Changed “Federal Motor Carrier Safety Association” to “Federal Motor Carrier Safety Administration” to use the correct name for the federal agency. The correct title is also found in 2012.1(a)(13).
10. Section 2012(e)(1). Changed “title 17, sections 91000-91022” to “17 CCR 91000-91022” to remain consistent with other sections referencing the California Code of Regulations in the regulation text.

³ California Air Resources Board. Second Notice of Public Availability of Additional Documents and Information. Posted on April 28, 2020. Available online at: <https://ww3.arb.ca.gov/regact/2019/act2019/15daynotice.pdf>.

11. Section 2012.1(a)(15). Replaced “delivery” with “deliver” for proper grammar.
12. Section 2012.2(a)(7). Replaced “refueling infrastructure” with “fueling infrastructure” to be consistent with section 2012.2(a)(6).
13. Section 2012.2(b). “This” was added to amend a grammatical error to now read as “Additional guidance for analysis periods used to respond to questions in this section is located in 2012.2(b)(7).”
14. Section 2012.2(b)(2)(H). This provision was edited to fix grammatical errors to read as “... a vehicle that returns to the vehicle home base nightly for 9 out of 10 work days, or always stays at home base, it would be counted.”

III. DOCUMENTS INCORPORATED BY REFERENCE

The regulation adopted by the Executive Officer incorporates by reference the following document:

- Title 40 of the Code of Federal Regulations, entitled Protection of the Environment: 40 CFR section 86.1803-01, amended on July 1, 2011, incorporated by reference in section 1963(c)(15)(A).

This document was incorporated by reference because it would be cumbersome, unduly expensive, and otherwise impractical to publish it in the California Code of Regulations. Distribution to all recipients of the California Code of Regulations is not needed because the interested audience for this document is limited to the technical staff at a portion of reporting facilities, most of whom are already familiar with this document. Also, the incorporated document was made available by CARB upon request during the rulemaking action and will continue to be available in the future.

IV. SUMMARY OF COMMENTS AND AGENCY RESPONSE:

Written comments were received during the 45-day comment period in response to the December 12, 2019, public hearing notice, and written and oral comments were presented at the First Board Hearing. Written comments were received during the 30-day period in response to the release of the 30-Day Notice package which included the modified staff proposal, and written and oral comments were presented at the Second Board Hearing. Written comments were received during the 15-day comment period in response to the release of the 15-Day Notice. Listed below are the organizations and individuals that provided comments:

Table B: Comment Period Codes

Comment Code	Comment Period	Description
OP	45-Day	Written comments received during the 45-day comment period for the Original Proposal
B1	1st Hearing Written Testimony	Written comments submitted at 1st Board Hearing
T1	1st Hearing Oral Testimony	1st Board Hearing oral testimony comments
RP1	30-Day	Written comments received during the comment period for the 30-Day Notice
B2	2nd Hearing Written Testimony	Written comments submitted at 2nd Board Hearing
T2	2nd Hearing Oral Testimony	2nd Board Hearing oral testimony comments
RP2	15-Day	Written comments received during the comment period for the 15-Day Notice

Table C: Written Comments Received on the 45-Day Original Proposal

Comment Code	Submitter	Affiliation	Date Received
OP-01	Jimmy O'Dea	Union of Concerned Scientists	November 12, 2019
OP-02	Katherine Garcia	Sierra Club	November 12, 2019
OP-03	Jeanne Orcutt	Coastal Energy Alliance	November 12, 2019
OP-04	Katie Beskeen	Elk Grove Chamber of Commerce	November 14, 2019
OP-05	Scott Ashton	Oceanside Chamber of Commerce	November 14, 2019
OP-06	Joani Woelfel	FAR WEST EQUIPMENT DEALERS ASSOCIATION	November 18, 2019
OP-07	Ryan Kenny	Clean Energy	November 18, 2019
OP-08	Kathy Dervin, MPH	350 Bay Area Action/ 350 Bay Area Transp.	November 19, 2019
OP-09	Gene Wunderlich	Southwest California Legislative Council	November 19, 2019
OP-10	Erin Guerrero	California Attractions and Parks Association	November 19, 2019
OP-11	Ashley Remillard	Individual	November 20, 2019
OP-12	Samuel Bayless	CA Fuels and Convenience Alliance	November 21, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-13	Clayton Heard	Individual	November 21, 2019
OP-14	Alicia Berhow	Orange County Business Council	November 22, 2019
OP-15	William Barrett	American Lung Association	November 22, 2019
OP-16	Stephen Soltz	Individual	November 24, 2019
OP-17	Riley Newman	Individual	November 24, 2019
OP-18	Melinda Heinemann	Individual	November 24, 2019
OP-19	Kenneth Hetge	Individual	November 25, 2019
OP-20	Constance Laningham	Individual	November 25, 2019
OP-21	Terry Spellman	Individual	November 25, 2019
OP-22	Mary Clumeck	Individual	November 25, 2019
OP-23	Keven Lenahan	Individual	November 25, 2019
OP-24	Brent Junkins	Individual	November 25, 2019
OP-25	Charles Krogh	Individual	November 25, 2019
OP-26	F. P. Skocilich	Individual	November 25, 2019
OP-27	Don Tucker	Individual	November 25, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-28	Genevieve Gale	Central Valley Air Quality Coalition	November 25, 2019
OP-29	Carol Moran	Individual	November 25, 2019
OP-30	Lois Thompson Hicks	Individual	November 25, 2019
OP-31	Carolyn Westover	Individual	November 26, 2019
OP-32	Priscilla Quiroz	Solid Waste Association of North America - CA Chapter	November 26, 2019
OP-33	Paul Miller	Northeast States for Coordinated Air Use Management	November 26, 2019
OP-34	Connie Yee	Individual	November 26, 2019
OP-35	Adrian Byram	Individual	November 26, 2019
OP-36	Joshua Blumenkopf	Individual	November 27, 2019
OP-37	Patrick Swarthout	Greater Coachella Valley Chamber of Commerce	November 27, 2019
OP-38	Marcos Cruz	Individual	November 29, 2019
OP-39	Leah Silverthorn	California Chamber of Commerce	November 29, 2019
OP-40	Amanda Millstein	California Climate Health Now	November 29, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-41	Thomas Hauck	IBEW 569	November 30, 2019
OP-42	Patrick Murphy	Individual	November 30, 2019
OP-43	Jim Stewart	Individual	December 1, 2019
OP-44	Veronica Pardo	California Refuse Recycling Council	December 2, 2019
OP-45	Erin Rodriguez	California Legislature	December 2, 2019
OP-46	Ray Pingle	Sierra Club	December 2, 2019
OP-47	David Page	Individual	December 2, 2019
OP-48	Micah Mitrosky	IBEW-NECA	December 3, 2019
OP-49	Michael Bullock	Individual	December 3, 2019
OP-50	Robert Graham	Strong PHEV Coalition	December 4, 2019
OP-51	Donna Boggs	California Grain & Feed Association	December 5, 2019
OP-52	Donna Boggs	California Seed Association	December 5, 2019
OP-53	Robert Harriman	High Desert Concrete Inc.	December 5, 2019
OP-54	Seren Taylor	Personal Insurance Federation of CA	December 5, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-55	Janette Daniel-Whitney	Individual	December 6, 2019
OP-56	Katy Gurin	350 Humboldt	December 6, 2019
OP-57	Patricia Michaud	Individual	December 6, 2019
OP-58	Bob Shepherd	Caterpillar Dealers	December 6, 2019
OP-59	Leslie Aguayo	Greenlining Institute	December 6, 2019
OP-60	Wayne Nastri	South Coast AQMD	December 6, 2019
OP-61	Martha Helak	SMUD	December 6, 2019
OP-62	Elena Engel	350 Bay Area Action	December 6, 2019
OP-63	Kevin Maggay	SoCalGas	December 6, 2019
OP-64	Andrew Langley	County of Marin	December 6, 2019
OP-65	Bob Keller	Individual	December 6, 2019
OP-66	Marc Carrel	BREATHE California of Los Angeles County	December 6, 2019
OP-67	Rebecca Franke	Individual	December 8, 2019
OP-68	Susan Dembowski	350 Climate Action, Sunrise Inland Empire, Indivisible group/Rooted in Resistance, Indivisible Suffragists, Ban Single Use Plastics	December 8, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-69	Sean Edgar	CleanFleets	December 8, 2019
OP-70	Jan Dietrick	350 Ventura County Climate Hub	December 8, 2019
OP-71	Marty Rhine	Individual	December 8, 2019
OP-72	Patricio Portillo	Natural Resource Defense Council	December 8, 2019
OP-73	Veronica Southerland	Individual	December 9, 2019
OP-74	Dawn Fenton	Volvo Group North America	December 9, 2019
OP-75	Laura Robinson	350 Riverside	December 9, 2019
OP-76	Samuel Appel	BlueGreen Alliance	December 9, 2019
OP-77	Michelle Kinman	Los Angeles Cleantech Incubator	December 9, 2019
OP-78	Christopher Lish	Individual	December 9, 2019
OP-79	Ben Granholm	Western Propane Gas Association	December 9, 2019
OP-80	Ben Granholm (Duplicate Submission)	Western Propane Gas Association	December 9, 2019
OP-81	Kathryn Lynch	CRRC Southern District	December 9, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-82	Heidi Sickler	Silicon Valley Leadership Group	December 9, 2019
OP-83	Sasan Saadat	Earthjustice	December 9, 2019
OP-84	Barbara Chance	Allison Transmission Inc.	December 9, 2019
OP-85	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-86	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-87	Timothy Blubaugh	Truck & Engine Manufacturers Association	December 9, 2019
OP-88	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-89	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-90	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-91	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-92	Andrea Vidaurre, submitted for 10 individuals	Center for Community Action and Environmental Justice	December 9, 2019
OP-93	Jack Lucero Fleck	Individual	December 9, 2019
OP-94	Lauren Navarro	Environmental Defense Fund	December 9, 2019
OP-95	Irvin Dawid	Individual	December 9, 2019
OP-96	Joy Williams	Environmental Health Coalition	December 9, 2019
OP-97	Margaret McCall	Lawrence Berkeley National Laboratory	December 9, 2019
OP-98	Michael Tunnell	American Trucking Association	December 9, 2019
OP-99	Eileen Wenger Tutt	California Electric Transportation Coalition	December 9, 2019
OP-100	Nancy Skinner	California State Senator, SD-09	December 9, 2019
OP-101	Evan Edgar	California Compost Coalition	December 9, 2019
OP-102	Fariya Ali	Pacific Gas & Electric	December 9, 2019
OP-103	James Talavera	Los Angeles Department of Water & Power	December 9, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-104	Jered Lindsay	Southern California Edison	December 9, 2019
OP-105	Chelsea Jenkins	ROUSH CleanTech	December 9, 2019
OP-106	Janet Whittick	California Council for Environmental and Economic Balance	December 9, 2019
OP-107	John Shears	Center for Energy Efficiency and Renewable Technologies	December 9, 2019
OP-108	Leah Silverthorn	California Chamber of Commerce	December 9, 2019
OP-109	Sarah Van Cleve	Tesla, Inc.	December 9, 2019
OP-110	Frank Harris	California Municipal Utilities Association	December 9, 2019
OP-111	Elaine Maltz	Individual	December 9, 2019
OP-112	Katie Davis	Individual	December 9, 2019
OP-113	Sandra Emerson	Fossil Free California	December 9, 2019
OP-114	Belen Gutierrez	Center for Community Action and Environmental Justice	December 9, 2019
OP-115	Leslie Aguayo	Greenlining Institute	December 9, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-116	Chris Shimoda	California Trucking Association	December 9, 2019
OP-117	Andrea Vidaurre	Center for Community Action and Environmental Justice	December 9, 2019
OP-118	Howard Maltz	Individual	December 9, 2019
OP-119	Joyce Xi	Individual	December 9, 2019
OP-120	Joyce Xi	Individual	December 9, 2019
OP-121-Form	Patricia Lewis	Earthjustice	December 10, 2019
OP-121-Form-26	Richard Renouf	Earthjustice	December 10, 2019
OP-121-Form-170	Michael D'Adamo	EarthJustice	December 10, 2019
OP-121-Form-277	Bess Townsend	Earthjustice	December 10, 2019
OP-122	Laurel Beckett	Individual	December 11, 2019
OP-123-Form	Marjorie Streeter	Sierra Club	December 11, 2019
OP-123-Form-42	Stephen Parks	Sierra Club	December 11, 2019
OP-123-Form-905	Gerald Glaser	Sierra Club	December 11, 2019
OP-123-Form-1161	Bill Reinke	Sierra Club	December 11, 2019

Comment Code	Submitter	Affiliation	Date Received
OP-123-Form-1241	Tynan Wyatt	Sierra Club	December 11, 2019
OP-124-Form	Rebecca Dwan	Union of Concerned Scientists	December 11, 2019
OP-125-Form	Joel Hirsch	Electric Trucks Now	December 11, 2019
OP-126-Form	Melissa Hutchinson	Natural Resource Defense Council	December 11, 2019
OP-126-Form-4	S. Stoveken	Natural Resource Defense Council	December 11, 2019
OP-126-Form-3353	Ellen Macneale	Natural Resource Defense Council	December 11, 2019
OP-126-Form-3484	Sari Fordham	Natural Resource Defense Council	December 11, 2019

Table D: Written Comments Received at the First Board Hearing – December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
B1-01	Alyssa Silhi	California Special Districts Association	December 12, 2019
B1-02	Kate Kanabay	Autocar, LLC	December 12, 2019
B1-03	Andrew Frank	Individual	December 12, 2019
B1-04	Michael Geller	Manufacturers of Emission Controls Association	December 12, 2019
B1-05	Jed Mandel	Truck & Engine Manufacturers Association	December 12, 2019
B1-06	Patricio Portillo	Natural Resources Defense Council	December 12, 2019
B1-07	Charles White	Western Independent Refiners Association	December 12, 2019
B1-08	Ken Dunham	West Coast Lumber and Building Material Association	December 12, 2019
B1-09	Jennifer Helfrich	Healthcare Systems	December 12, 2019
B1-10	Lauren Navarro	Environmental Defense Fund	December 12, 2019
B1-11	Ross Good	Fiat Chrysler Automobiles	December 12, 2019
B1-12	Thomas Lawson	CRRC, Agility, CNGVC, Clean Energy, WPGA, SoCalGas, BAC, Trillium	December 12, 2019
B1-13	Veronica Roman	Center for Community Action and Environmental Justice	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
B1-14	Ruben Aronin	California Mayors	December 12, 2019
B1-15	Joyce Xi	Climate Scientists	December 12, 2019
B1-16	Jaime Hall	General Motors	December 12, 2019

Table E: Oral Comments Received at the First Board Hearing - December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-01	Matt Miyasato	South Coast AQMD	December 12, 2019
T1-02	Mark Tang	Bay Area Air Quality Management District	December 12, 2019
T1-03	Mike Lewis	Construction Industry Air Quality Coalition	December 12, 2019
T1-04	David Asti	Southern California Edison	December 12, 2019
T1-05	Nico Bouwkamp	California Fuel Cell Partnership	December 12, 2019
T1-06	Frank Harris	California Municipal Utilities Association	December 12, 2019
T1-07	Kate Kanabay	Autocar, LLC	December 12, 2019
T1-08	Michael Geller	Manufacturers of Emission Controls Association	December 12, 2019
T1-09	Harris Frank	Individual	December 12, 2019
T1-10	Ray Pingle	Sierra Club	December 12, 2019
T1-11	Dawn Fenton	Volvo Group North America	December 12, 2019
T1-12	Priscilla Quiroz	Solid Waste Association of North America - CA Chapter	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-13	Micah Mitrosky	IBEW 569	December 12, 2019
T1-14	Jennifer Kropke	IBEW LA	December 12, 2019
T1-15	David Yow	Port of San Diego	December 12, 2019
T1-16	Ben Granholm	Western Propane Gas Association	December 12, 2019
T1-17	Joy Williams	Environmental Health Coalition	December 12, 2019
T1-18	Patricio Portillo	Natural Resource Defense Council	December 12, 2019
T1-19	Jed Mandel	Truck & Engine Manufacturers Association	December 12, 2019
T1-20	Robert Graham	Strong PHEV Coalition	December 12, 2019
T1-21	Todd Campbell	Clean Energy	December 12, 2019
T1-22	Leah Silverthorn	California Chamber of Commerce	December 12, 2019
T1-23	Gary Conover	California Automotive Wholesalers Association	December 12, 2019
T1-24	Ken Dunham	West Coast Lumber and Building Material Association	December 12, 2019
T1-25	Chuck White	Western Independent Refiners Association	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-26	Erin Guerrero	California Attractions and Parks Association	December 12, 2019
T1-27	Steve McCarthy	California Retailers Association	December 12, 2019
T1-28	Jennifer Helfrich	Ceres Business for Innovative Climate and Energy Policy	December 12, 2019
T1-29	Bernie Kotlier	IBEW-NECA	December 12, 2019
T1-30	Janet Whittick	California Council for Environmental and Economic Balance	December 12, 2019
T1-31	Consuelo Hernandez	City of Sacramento	December 12, 2019
T1-32	Sasan Saadat	Earthjustice	December 12, 2019
T1-33	Sara Greenwald	350 Bay Area Action	December 12, 2019
T1-34	Clair Brown	350 Bay Area Action	December 12, 2019
T1-35	Richard Katz	No Coal in Richmond	December 12, 2019
T1-36	Candace Kim	Moving Forward Network	December 12, 2019
T1-37	Jessica Tovar	Moving Forward Network	December 12, 2019
T1-38	Iris Verduzco	Moving Forward Network	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-39	Mark Horton	Health Organizations	December 12, 2019
T1-40	William Barrett	American Lung Association	December 12, 2019
T1-41	Ryan Kenny	Clean Energy	December 12, 2019
T1-42	Jon Costantino	Tradesman Advisors Inc.	December 12, 2019
T1-43	Navarro, Lauren	Environmental Defense Fund	December 12, 2019
T1-44	Lawson, Thomas	California Natural Gas Vehicle Coalition	December 12, 2019
T1-45	Amol Phadke	Lawrence Berkeley National Laboratory	December 12, 2019
T1-46	Alex Cherin	California Trucking Association	December 12, 2019
T1-47	Noelle Cremers	California Farm Bureau Federation	December 12, 2019
T1-48	Leslie Aguayo	Greenlining Institute	December 12, 2019
T1-49	Evan Edgar	California Compost Coalition	December 12, 2019
T1-50	Carlo De La Cruz	Sierra Club	December 12, 2019
T1-51	Katherine Garcia	Sierra Club	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-52	Jim O'Dea	Union of Concerned Scientists	December 12, 2019
T1-53	Olga Flores	Individual	December 12, 2019
T1-54	Lorena Rodarte	Individual	December 12, 2019
T1-55	Lilia Ulloa	Individual	December 12, 2019
T1-56	Veronica Roman	Individual	December 12, 2019
T1-57	Adu Trujillo	Individual	December 12, 2019
T1-58	Kimberly Chavez	Individual	December 12, 2019
T1-59	Miguel Rivera	Individual	December 12, 2019
T1-60	Gabriela Mendez	Center for Community Action and Environmental Justice	December 12, 2019
T1-61	Brenda Angulo	Individual	December 12, 2019
T1-62	Andrea Nidaurre	Center for Community Action and Environmental Justice	December 12, 2019
T1-63	Allen Hernandez	Center for Community Action and Environmental Justice	December 12, 2019
T1-64	Dan Sakaguchi	Communities for a Better Environment	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-65	Cynthia Pinto-Cabrera	Central Valley Air Quality Coalition	December 12, 2019
T1-66	Kevin Maggay	Southern California Gas Company	December 12, 2019
T1-67	Edith Cerbreros	Communities for a New California	December 12, 2019
T1-68	Anna Lisa Vargas	Communities for a New California	December 12, 2019
T1-69	Adam Harper	California Construction and Industrial Materials Association	December 12, 2019
T1-70	Mike Tunnell	American Trucking Association	December 12, 2019
T1-71	Brittany Blanco	Comite Civico del Valle	December 12, 2019
T1-72	Isumay Sandoval	Comite Civico del Valle	December 12, 2019
T1-73	Miguel Hernandez	Comite Civico del Valle	December 12, 2019
T1-74	Sergio Valenzuela	Comite Civico del Valle	December 12, 2019
T1-75	Luis Olmedo	Comite Civico del Valle	December 12, 2019
T1-76	Joyce Xi	Union of Concerned Scientists	December 12, 2019
T1-77	Chris Shimoda	California Trucking Association	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-78	Paul Cort	Earthjustice	December 12, 2019
T1-79	Meredith Alexander	CALSTART	December 12, 2019
T1-80	Sean Edgar	CleanFleets	December 12, 2019
T1-81	Eileen Tutt	California Electric Transportation Coalition	December 12, 2019
T1-82	Shayda Azamian	Leadership Counsel for Justice and Accountability	December 12, 2019
T1-83	Elodia Perez	Individual	December 12, 2019
T1-84	Julia Jordan	Leadership Counsel for Justice and Accountability	December 12, 2019
T1-85	Bill Magavern	Coalition for Clean Air	December 12, 2019
T1-86	Roxana Bekemohammadi	Ballard Power Systems	December 12, 2019
T1-87	Samuel Appel	BlueGreen Alliance	December 12, 2019
T1-88	Kathy Hoang	Partnership for Working Families	December 12, 2019
T1-89	Anthony Vallecillo	Warehouse Workers Resource Center	December 12, 2019
T1-90	Adam Diaz	Warehouse Workers Resource Center	December 12, 2019

Comment Code	Submitter	Affiliation	Date Received
T1-91	Kimberly Garcia	CAUSE Youth Committee	December 12, 2019
T1-92	Citalli Pacheco	CAUSE Youth Committee	December 12, 2019
T1-93	Evan Ochoa	CAUSE Youth Committee	December 12, 2019
T1-94	Yesenia Ponce	CAUSE Youth Committee	December 12, 2019
T1-95	Cristel Gonzalez	CAUSE Youth Committee	December 12, 2019
T1-96	Yesenia Gonzalez	CAUSE Youth Committee	December 12, 2019
T1-97	Ocil Herrejon	CAUSE Youth Committee	December 12, 2019
T1-98	Ruben Aronin	Better World Group Advisors	December 12, 2019
T1-99	Kirstin Kolpitzke	Calforests	December 12, 2019

Table F: Written Comments Received on the 30-Day Proposal

Comment Code	Submitter	Affiliation	Date Received
RP1-01	Lena Holtz	Individual	April 28, 2020
RP1-02	Drayton Tucker	Individual	April 28, 2020
RP1-03	Daniel Baldassare	Individual	April 29, 2020
RP1-04	Jon Wizard	Councilmember, City of Seaside	April 29, 2020
RP1-05	Allen Genetti	California Tank Lines Inc. and Chemical Transfer Co.	May 1, 2020
RP1-06	Claire Bleymaier	Individual	May 4, 2020
RP1-07	Richard Battersby	East Bay Clean Cities Coalition	May 5, 2020
RP1-08	Clean Air	Individual	May 6, 2020
RP1-09	Larry Wolf	Individual	May 6, 2020
RP1-10	Mihail Karamanolev	Individual	May 6, 2020
RP1-11	Kyle Berquist	Individual	May 6, 2020
RP1-12	Randy Bremer	Individual	May 6, 2020
RP1-13- Form	John Pasqua	Individual	May 8, 2020
RP1-13- Form-60	Kathy Kelly	Individual	May 8, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-13-Form-170	Sue Fox	Individual	May 8, 2020
RP1-13-Form-399	Scott Workinger	Individual	May 8, 2020
RP1-13-Form-992	Jane Stock	Individual	May 8, 2020
RP1-13-Form-1296	Michael Paul	Individual	May 8, 2020
RP1-13-Form-1746	Timothy Enloe	Individual	May 8, 2020
RP1-13-Form-2216	Michael Anderson	Individual	May 8, 2020
RP1-13-Form-2528	Paul Muns	Individual	May 8, 2020
RP1-13-Form-2583	Jennifer Nunn	Individual	May 8, 2020
RP1-13-Form-2590	M. Lesinski	Individual	May 8, 2020
RP1-13-Form-2635	Kathy OBrien	Individual	May 8, 2020
RP1-13-Form-2837	Schuyler Morgan	Individual	May 8, 2020
RP1-13-Form-3275	Josseline Diaz	Individual	May 8, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-13-Form-3346	Roger Boyer	Individual	May 8, 2020
RP1-13-Form-3374	Kate Skelly	Individual	May 8, 2020
RP1-14	Erin Rodriguez	California Legislature	May 8, 2020
RP1-15	Kenneth Wertz	Individual	May 8, 2020
RP1-16	Don White	IAASP of California	May 10, 2020
RP1-17	Don White	IAASP of California	May 10, 2020
RP1-18	Art Lewellan	Individual	May 11, 2020
RP1-19	Savannah Jimenez	Individual	May 12, 2020
RP1-20	Dan Jacobson	Environment California	May 13, 2020
RP1-21	Ms. Ann Bermingham	Individual	May 13, 2020
RP1-22	Ray Pingle	Sierra Club California	May 13, 2020
RP1-23	Sophie Castleton	Individual	May 13, 2020
RP1-24	Rory Stewart	LABC	May 13, 2020
RP1-25	Gary Nye	Individual	May 13, 2020
RP1-26	Elizabeth Hernandez	Individual	May 14, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-27	David Pedersen	Individual	May 14, 2020
RP1-28	Thomas Becker	Individual	May 16, 2020
RP1-29	Elizabeth Mittermiller	San Diego 350	May 16, 2020
RP1-30	Gretchen Newsom	IBEW Local 569	May 18, 2020
RP1-31	Chris Benz	Napa Climate NOW!	May 20, 2020
RP1-32	Urvi Nagrani	Viatec Inc.	May 21, 2020
RP1-33	Lisa Chang	Medical Society Consortium on Climate and Health	May 22, 2020
RP1-34	Staci Heaton	Rural County Representatives of CA	May 22, 2020
RP1-35	Hugh Ross	350 Bay Area Action	May 22, 2020
RP1-36	John Snell	Individual	May 22, 2020
RP1-37	David Jaber	Individual	May 22, 2020
RP1-38	Sue Lee Mossman	Individual	May 24, 2020
RP1-39	Daniel Chandler	Individual	May 24, 2020
RP1-40	Patrick Carr	Individual	May 24, 2020
RP1-41	Deborah Dukes	Individual	May 24, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-42	Brittany Caplin	Proterra	May 25, 2020
RP1-43	Linette Davis	Individual	May 25, 2020
RP1-44	David Renschler	MEMA NorCal	May 26, 2020
RP1-45	Mark Grossman	350 Silicon Valley	May 26, 2020
RP1-46	Zach Amittay	E2	May 26, 2020
RP1-47	Thomas Malzbender	Cultural Heritage Imaging	May 26, 2020
RP1-48	Gary Gero	County of Los Angeles Chief Executive Office- Chief Sustainability Office	May 26, 2020
RP1-49	Steve Schmidt	Carbon Free Silicon Valley	May 26, 2020
RP1-50	Patricia Kinney	Individual	May 26, 2020
RP1-51	Terry Nagel	Sustainable San Mateo County	May 26, 2020
RP1-52	Sandra Slater	Individual	May 26, 2020
RP1-53	Paul Miller	NESCAUM	May 26, 2020
RP1-54	Timothy Menard	SinWaves Inc.	May 26, 2020
RP1-55	Leticia Gonzalez	Individual	May 26, 2020
RP1-56	Joyce Pfenning	Individual	May 26, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-57	Samuel Appel	BlueGreen Alliance	May 26, 2020
RP1-58	Ray Pingle	Sierra Club California	May 26, 2020
RP1-59	Ted Rees	Project Green Home	May 26, 2020
RP1-60	Margaret Brosnan	Individual	May 26, 2020
RP1-61	Jeralyn Moran	Individual	May 26, 2020
RP1-62	Leane Eberhart	Project Green Home	May 26, 2020
RP1-63	Stuart Bernstein	Sustainable Capital, LLC	May 26, 2020
RP1-64	Chelsea Sexton	SPHEV	May 26, 2020
RP1-65	Fran Salisbury	Individual	May 26, 2020
RP1-66	Andrew McKercher	IBEW Member	May 26, 2020
RP1-67	Paula Fogarty	Individual	May 26, 2020
RP1-68	Linda Zagula	Individual	May 26, 2020
RP1-69	Ms. Pauline Seales	Individual	May 27, 2020
RP1-70	Karen Harrington	Climate Reality Project, 350 Bay Area	May 27, 2020
RP1-71	David Fork	Individual	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-72	Hilary Young	Etsy, Inc.	May 27, 2020
RP1-73	Daniel Yost	Former Mayor and Current Councilmember of Woodside, CA	May 27, 2020
RP1-74	Sasan Saadat	Earthjustice and Sierra Club	May 27, 2020
RP1-75	Geoffrey Smith	Individual	May 27, 2020
RP1-76	Thomas Patterson	Individual	May 27, 2020
RP1-77	Tina Chow	Individual	May 27, 2020
RP1-78	Catherine Cameron	Individual	May 27, 2020
RP1-79	Deborah Levoy	Individual	May 27, 2020
RP1-80	Glenn Choe	Toyota Motor North America	May 27, 2020
RP1-81	Wahila Wilkie	Stanford University	May 27, 2020
RP1-82	Susan Cavalieri	Individual	May 27, 2020
RP1-83	Sarah Sachs	Investors with Over \$239 Billion in Assets Under Management and Advisement	May 27, 2020
RP1-84	George Licina	Individual	May 27, 2020
RP1-85	Shelby Neal	NBB and CABA	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-86	Gary Yowell	Automotive Engineer	May 27, 2020
RP1-87	Carol Ruth	Individual	May 27, 2020
RP1-88	Matt Smith	Individual	May 27, 2020
RP1-89	Gary Latshaw	Air Quality Chair of Sierra Club	May 27, 2020
RP1-90	Jeanie Bunker	Individual	May 27, 2020
RP1-91	Anne Gergory	Individual	May 27, 2020
RP1-92	Michael Roberts	Individual	May 27, 2020
RP1-93	Ellen Koivisto	Individual	May 27, 2020
RP1-94	Ms. Marilyn Zack	Individual	May 27, 2020
RP1-95	Noah Haydon	Individual	May 27, 2020
RP1-96	Frances Aubrey	Inside Tennis	May 27, 2020
RP1-97	Steven Zornetzer	Individual	May 27, 2020
RP1-98	Erin Chalmers	Individual	May 27, 2020
RP1-99	Terry Barton	Individual	May 27, 2020
RP1-100	Andrea Davis	Individual	May 27, 2020
RP1-101	Thomas Carlino	Individual	May 27, 2020
RP1-102	Joan Herbert	Individual	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-103	Thalia Lubin	Individual	May 27, 2020
RP1-104	Pradeep Rao	Individual	May 27, 2020
RP1-105	Jackie Barshak	350.org Silicon Valley, XR Silicon Valley	May 27, 2020
RP1-106	Gavin Gretter	Trillium	May 27, 2020
RP1-107	Bruce Naegel	Sustainable Silicon Valley	May 27, 2020
RP1-108	Joyce Jeckell	Individual	May 27, 2020
RP1-109	Leah Redwood	Individual	May 27, 2020
RP1-110	Gail Sredanovic	Individual	May 27, 2020
RP1-111	Mrs. Donna Davies	Individual	May 27, 2020
RP1-112	Selden Prentice	PSE	May 27, 2020
RP1-113	Nancy Arbuckle	Individual	May 27, 2020
RP1-114	David Bezanson	Physicians for Social Responsibility	May 27, 2020
RP1-115	John Reister	Individual	May 27, 2020
RP1-116	Nicole Kemeny	350 Silicon Valley	May 27, 2020
RP1-117	John Galebach	Individual	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-118	Lucas Filshill	Individual	May 27, 2020
RP1-119	Peggy Schmidt	Individual	May 27, 2020
RP1-120	Will Barrett	American Lung Association	May 27, 2020
RP1-121	Sue Tomasic	Individual	May 27, 2020
RP1-122	Brian Haberly	Individual	May 27, 2020
RP1-123	Ms. Stephanie Reader	Individual	May 27, 2020
RP1-124	Katherine Black	Benicians for a Safe and Healthy Community	May 27, 2020
RP1-125	Mary Ann Furda	Indivisible Berkeley Science & Environment Team	May 27, 2020
RP1-126	Kevin Ma	Individual	May 27, 2020
RP1-127	Marilyn Sargent	Individual	May 27, 2020
RP1-128	Elaine Maltz	San Diego 350	May 27, 2020
RP1-129	Michael Fukuyama	Bay Area 350	May 27, 2020
RP1-130	Mrs. Jane Jensen	Individual	May 27, 2020
RP1-131	Maryl Olivera	Individual	May 27, 2020
RP1-132	Pamela Brigg	Individual	May 27, 2020
RP1-133	Diana and Brian Moss	Individual	May 27, 2020
RP1-134	Jack Litewka	Individual	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-135	Rani Fischer	Individual	May 27, 2020
RP1-136	Gabriella Nightingale	Individual	May 27, 2020
RP1-137	Karen Boyd and Turner Boyd	Individual	May 27, 2020
RP1-138	Jessica Woodard	Individual	May 27, 2020
RP1-139	Christopher Lish	Individual	May 27, 2020
RP1-140	Nate Baguio	The Lion Electric Co.	May 27, 2020
RP1-141	Virginia Van Kuran	Individual	May 27, 2020
RP1-142	Noah Haydon	Individual	May 27, 2020
RP1-143	Danielle Lemaitre	Individual	May 27, 2020
RP1-144	Sarah Jumper	HEALNSD	May 27, 2020
RP1-145	J. Barazi	Zero-Emission Partners	May 27, 2020
RP1-146	Annapurna Holtzapple	Individual	May 27, 2020
RP1-147	Doug Brown	Individual	May 27, 2020
RP1-148	Amol Phadke	Lawrence Berkeley National Lab	May 27, 2020
RP1-149	Stacy Brobst	Individual	May 27, 2020
RP1-150	Mr. Roland Saher	Individual	May 27, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-151	Marios Leventopoulos	Individual	May 27, 2020
RP1-152	Savannah McLaughlin	Individual	May 27, 2020
RP1-153	J. Burchinal	Individual	May 27, 2020
RP1-154	Daniel Winger	Individual	May 27, 2020
RP1-155	Allan Campbell	Individual	May 27, 2020
RP1-156	Carol Mone	Individual	May 28, 2020
RP1-157	Charles Davidson	Rodeo Citizens Association	May 28, 2020
RP1-158	Elizabeth Garcia	Ecologist	May 28, 2020
RP1-159	Sheila Carillo	Individual	May 28, 2020
RP1-160	Pam N.	Individual	May 28, 2020
RP1-161	Peter Gang	Individual	May 28, 2020
RP1-162	Wendy Buffett	Individual	May 28, 2020
RP1-163	Paul Beeson	Individual	May 28, 2020
RP1-164	Alexa Forrester	Individual	May 28, 2020
RP1-165	Kimberly Butt	Individual	May 28, 2020
RP1-166	Sandy Emerson	Individual	May 28, 2020
RP1-167	Hoai-An Truong	Mothers Out Front South Bay	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-168	Anne Marie Tipton	Individual	May 28, 2020
RP1-169	Steven Brink	California Forestry Association	May 28, 2020
RP1-170	Kevin Conway	Individual	May 28, 2020
RP1-171	Robert Roark	BAMTECH	May 28, 2020
RP1-172	James Talavera	LADWP	May 28, 2020
RP1-173	Elaine Salinger	CCL	May 28, 2020
RP1-174	Ms. Sheila Thorne	Individual	May 28, 2020
RP1-175	Piper McNulty	SV-CAN!, APALI	May 28, 2020
RP1-176	Michael Weinbauer	Individual	May 28, 2020
RP1-177	Susan Kistin	Individual	May 28, 2020
RP1-178	Marialena Malejan-Roussere	Individual	May 28, 2020
RP1-179	Susan Harman	Individual	May 28, 2020
RP1-180	Patricia Blevins	Individual	May 28, 2020
RP1-181	Chandra Johannesson	East Bay Municipal Utility District	May 28, 2020
RP1-182	Ralph Dennis	Progressive Democrats of Benicia	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-183	Eric Knapp	Individual	May 28, 2020
RP1-184	Cheryl Westmont	Individual	May 28, 2020
RP1-185	Emily Hopkins	350	May 28, 2020
RP1-186	Ellyn Dooley	Individual	May 28, 2020
RP1-187	Rakesh Koneru	Hummingbird EV	May 28, 2020
RP1-188	Patricio Portillo	Natural Resources Defense Council	May 28, 2020
RP1-189	Yayla Sezginer	Biological Oceanographer	May 28, 2020
RP1-190	Kira Barsten	Individual	May 28, 2020
RP1-191	Cody Taylor	Garrett Advancing Motion	May 28, 2020
RP1-192	Yasmine Agelidis	LA County Electric Truck and Bus Coalition	May 28, 2020
RP1-193	Greg Martin	Ford Motor Company	May 28, 2020
RP1-194	Ashley Remillard	Agility Fuel Solutions	May 28, 2020
RP1-195	Barbara Kiss	General Motors	May 28, 2020
RP1-196	Steven Brink, Duplicate Submission of RP1-169	California Forestry Association	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-197	Kathryn Ostapuk	Department of Defense	May 28, 2020
RP1-198	Bart Beeman	Individual	May 28, 2020
RP1-199	Kenneth Russell	Individual	May 28, 2020
RP1-200	Marianna Grossman	Mountain View Resident and Business Owner	May 28, 2020
RP1-201	David Warrender	Euphonics	May 28, 2020
RP1-202	Noelle Mattock	City of Roseville	May 28, 2020
RP1-203	Sasan Saadat, Duplicate Submission of RP1-74	Earthjustice	May 28, 2020
RP1-204	Louise Herschelle	Individual	May 28, 2020
RP1-205	Laurie Holmes	Motor and Equipment Manufacturers Association	May 28, 2020
RP1-206	Suzanne Seivright-Sutherland	CalCIMA	May 28, 2020
RP1-207	D. Page	350 Silicon-Valley Telework Team	May 28, 2020
RP1-208	Chris Nevers	Rivian	May 28, 2020
RP1-209	Anika K.	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-210	Michael Lewis	Construction Industry Air Quality Coalition	May 28, 2020
RP1-211	Ann Rothschild	Individual	May 28, 2020
RP1-212	John Cordes	Sierra Club	May 28, 2020
RP1-213-Form	Katherine Garcia	Sierra Club California	May 28, 2020
RP1-213-Form-01	Frances Lux	Individual	May 28, 2020
RP1-213-Form-02	Steve Sketo	Individual	May 28, 2020
RP1-213-Form-03	Lawrence Fox	Individual	May 28, 2020
RP1-213-Form-04	Marcus Chee	Individual	May 28, 2020
RP1-213-Form-05	Mike Sisson	Individual	May 28, 2020
RP1-213-Form-07	Grace Fenton	Individual	May 28, 2020
RP1-213-Form-09	Noah and Elena Armstrong	Individual	May 28, 2020
RP1-213-Form-13	Diane Dynes	Individual	May 28, 2020
RP1-213-Form-15	Jean Szpakowski	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-213-Form-18	Kate Williams	Individual	May 28, 2020
RP1-213-Form-24	Bruce Wilson	Individual	May 28, 2020
RP1-213-Form-30	Jim Landholm	Individual	May 28, 2020
RP1-213-Form-41	Daniel Donovan	Individual	May 28, 2020
RP1-213-Form-66	Debbie Cazares	Individual	May 28, 2020
RP1-213-Form-347	Carol Scher	Individual	May 28, 2020
RP1-213-Form-435	John Sargent	Individual	May 28, 2020
RP1-213-Form-478	Tom and Darlene McCalmont	Individual	May 28, 2020
RP1-213-Form-503	Ben Trefry	Individual	May 28, 2020
RP1-213-Form-521	Amy Seliger	Individual	May 28, 2020
RP1-213-Form-556	Brook Porter	Individual	May 28, 2020
RP1-213-Form-624	Carol Herrera	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-213-Form-631	Cristal Aguilar	Individual	May 28, 2020
RP1-213-Form-813	Peter Stricker	Individual	May 28, 2020
RP1-213-Form-814	Jason Bunker	Individual	May 28, 2020
RP1-213-Form-875	Joy Sigmon	Individual	May 28, 2020
RP1-213-Form-876	Jeff and Jackie Mann	Individual	May 28, 2020
RP1-213-Form-877	Jim Davis	Individual	May 28, 2020
RP1-213-Form-952	Mary Anne Penton	Individual	May 28, 2020
RP1-213-Form-1098	Jennifer Russell	Individual	May 28, 2020
RP1-214	Dawn Fenton	Volvo Group North America	May 28, 2020
RP1-215	Janet Whittick	CCEEB	May 28, 2020
RP1-216	Kevin Maggay	SoCalGas	May 28, 2020
RP1-217	Michael Hazelton	Individual	May 28, 2020
RP1-218	Timothy Blubaugh	Truck & Engine Manufacturers Association	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-219	Chris Busch	Energy Innovation	May 28, 2020
RP1-220	Evan Carlson	Individual	May 28, 2020
RP1-221	Christine Ashley	Individual	May 28, 2020
RP1-222	Sarah Sachs	Ceres	May 28, 2020
RP1-223	Ben Schwartz	Clean Coalition	May 28, 2020
RP1-224	Harriete Berman	Individual	May 28, 2020
RP1-225	Leslie Peterson	Individual	May 28, 2020
RP1-226	Debby Belansky	UUCSR	May 28, 2020
RP1-227	Karen Jacques	Individual	May 28, 2020
RP1-228	Thomas Lawson	CNGVC & Others	May 28, 2020
RP1-229	Alison Biggs	Individual	May 28, 2020
RP1-230	Roxana Ramirez	Metropolitan Water District	May 28, 2020
RP1-231	Leela Rao	San Pedro Bay Ports Clean Air Action Plan	May 28, 2020
RP1-232	Michael Kiely	UPS	May 28, 2020
RP1-233	Veronica Pardo	Resource Recovery Coalition of CA	May 28, 2020
RP1-234	Junaid Faruq	SRECTrade	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-235	Andy Schwartz	Tesla	May 28, 2020
RP1-236	Joshua Regalado	Community Center for Environmental Justice	May 28, 2020
RP1-237	Roxana Ramirez	Metropolitan Water District of Southern California	May 28, 2020
RP1-238	Leah Silverthorn	California Chamber of Commerce	May 28, 2020
RP1-239	Roxana Ramirez, Duplicate Submission of RP1-237	Metropolitan Water District of Southern California	May 28, 2020
RP1-240	Jack Symington	Los Angeles Cleantech Incubator	May 28, 2020
RP1-241	Kristain Corby	CalETC	May 28, 2020
RP1-242	Debbie Mytels	Peninsula Interfaith Climate Action	May 28, 2020
RP1-243	Lauren Navarro	Environmental Defense Fund	May 28, 2020
RP1-244	Nate Springer	Gladstein, Neandross, and Associates	May 28, 2020
RP1-245	Sierra Barsten	Individual	May 28, 2020
RP1-246	Helen Fitzmaurice	UAW 2865	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-247	Taylor Collison	California Trucking Association	May 28, 2020
RP1-248	Martha Turner	Individual	May 28, 2020
RP1-249	Roger Hallsten	Individual	May 28, 2020
RP1-250	Jamie Minden	Silicon Valley Youth Climate Strikes, Sunrise Silicon Valley	May 28, 2020
RP1-251	Cor Van de Water	Project Green Home	May 28, 2020
RP1-252	Eric Knapp	Individual	May 28, 2020
RP1-253	Carolyn	Individual	May 28, 2020
RP1-254	Michelle Orrock	BP America	May 28, 2020
RP1-255	Chandra Johannesson	EBMUD	May 28, 2020
RP1-256	Kelly Jones	Individual	May 28, 2020
RP1-257	Nanette Diaz	Congress of the United States House of Representatives	May 28, 2020
RP1-258	David Rosenstein and Tori Nourafchan	Individual	May 28, 2020
RP1-259	Vazken Kassakhian	Southern California Edison	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-260-Form	Aguilar Josue	NRDC	May 28, 2020
RP1-260-Form-300	Lynn Goleta	Individual	May 28, 2020
RP1-260-Form-458	Dennis Bicker	Individual	May 28, 2020
RP1-260-Form-917	Chuck L.	Individual	May 28, 2020
RP1-260-Form-1068	Normand Cloutier	Individual	May 28, 2020
RP1-260-Form-1148	Tracy Talley	Individual	May 28, 2020
RP1-260-Form-1512	Robert Burlin	Individual	May 28, 2020
RP1-260-Form-1556	Frances Hinckley	Individual	May 28, 2020
RP1-260-Form-1581	Melissa Hay	Individual	May 28, 2020
RP1-260-Form-1559	John Wills	Individual	May 28, 2020
RP1-260-Form-1707	Juanita Mangan VanHam	Individual	May 28, 2020
RP1-260-Form-1739	Carole Grace	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-260-Form-1812	Karen Mathes	Individual	May 28, 2020
RP1-260-Form-1914	Phil Chandler	Individual	May 28, 2020
RP1-260-Form-2000	Jim Keltner	Individual	May 28, 2020
RP1-260-Form-2015	Sheri Cavanaugh	Individual	May 28, 2020
RP1-260-Form-2024	Daren Black	Individual	May 28, 2020
RP1-260-Form-2088	LaVive Kiely	Individual	May 28, 2020
RP1-260-Form-2129	Jill Precheur	Individual	May 28, 2020
RP1-260-Form-2197	Org and Anke Raue	Individual	May 28, 2020
RP1-260-Form-2387	Brent Larsen	Individual	May 28, 2020
RP1-260-Form-2507	Laurel Bergman	Individual	May 28, 2020
RP1-260-Form-2531	Shirley Feriks	Individual	May 28, 2020
RP1-260-Form-2778	Jim Alexander	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-260-Form-3085	Karin Uphoff	Individual	May 28, 2020
RP1-260-Form-3120	Cle Betu	Individual	May 28, 2020
RP1-260-Form-3427	Melody O'Neill	Individual	May 28, 2020
RP1-260-Form-3526	Cheryl Porter	Individual	May 28, 2020
RP1-260-Form-3583	David Sacerdote	Individual	May 28, 2020
RP1-260-Form-3718	Martin Iseri	Individual	May 28, 2020
RP1-260-Form-3838	Jennifer Kreger	Individual	May 28, 2020
RP1-260-Form-3944	Scottie Hielleaio	Individual	May 28, 2020
RP1-260-Form-4164	Peter Warren	Individual	May 28, 2020
RP1-260-Form-4701	Susan Bradfield	Individual	May 28, 2020
RP1-260-Form-5418	Georgette Cora	Individual	May 28, 2020
RP1-261	Karla Briseno	Individual	May 28, 2020
RP1-262	Peri Plantenberg	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-263	Katia Bravo	Individual	May 28, 2020
RP1-264	Michael Nagler	Metta Center for Nonviolence	May 28, 2020
RP1-265	Meredith Alexander	CALSTART	May 28, 2020
RP1-266	Amol Phadke	LBNL	May 28, 2020
RP1-267	Maia L.	Individual	May 28, 2020
RP1-268	Emma Grant-Bier	Individual	May 28, 2020
RP1-269	Gladwyn D'Souza	Individual	May 28, 2020
RP1-270	Marie Judson	Individual	May 28, 2020
RP1-271	Steve White	Individual	May 28, 2020
RP1-272	Tiffany Roberts	WSPA	May 28, 2020
RP1-273	Thai Nguyen	Caltrans	May 28, 2020
RP1-274	Deborah Garvey	Economist	May 28, 2020
RP1-275	Sven Thesen	Project Green Home	May 28, 2020
RP1-276	Mallory Mitton	Individual	May 28, 2020
RP1-277	Laurie-Ann Barbour	Project Green Home	May 28, 2020
RP1-278	Carola Barton	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-279	Janelle London	Coltura	May 28, 2020
RP1-280	Sarah Sachs, Duplicate Submission of RP1-222	California Health Care Climate Alliance	May 28, 2020
RP1-281	Jaron Weston	San Diego Gas and Electric	May 28, 2020
RP1-282	Jennifer Steck	Individual	May 28, 2020
RP1-283	Tim Sullivan, Eric Garcetti	Los Angeles Mayor	May 28, 2020
RP1-284	Michael Geller, Rasto Brezny	MECA	May 28, 2020
RP1-285	Jack Symington, Matt Peterson	Los Angeles Cleantech Incubator	May 28, 2020
RP1-286	Veronica Roman	Individual	May 28, 2020
RP1-287	Susan Larsen, Katherine Hoff	Center for Biological Diversity	May 28, 2020
RP1-288	Alison Torres, Alfred Javier	Eastern Municipal Water District	May 28, 2020
RP1-289	Brenda Huerta	Individual	May 28, 2020
RP1-290	Joann Ames	Individual	May 28, 2020
RP1-291	John Mulhern	Individual	May 28, 2020
RP1-292	Erica Stanojevic	Individual	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-293	Eileen Bill	Individual	May 28, 2020
RP1-294	Jimmy O'Dea	Union of Concerned Scientists	May 28, 2020
RP1-295	Serena Zhao	350 Silicon Valley	May 28, 2020
RP1-296	Sybil Cramer	EAASV	May 28, 2020
RP1-297	Andrea Vidaurre	CCA EJ	May 28, 2020
RP1-298	Belen Gutierrez	Individual	May 28, 2020
RP1-299	Carmen Lua	Individual	May 28, 2020
RP1-300	William Benson	Individual	May 28, 2020
RP1-301	Christine Welter	Individual	May 28, 2020
RP1-302	Frank Harris	California Municipal Utilities Association	May 28, 2020
RP1-303	Vazken Kassakhian, Duplicate Submission of RP1-259	Southern California Edison	May 28, 2020
RP1-304	Carol Kiparsky and Ian Irwin	Individual	May 28, 2020
RP1-305	Nathan Chan	Urban Environmentalists	May 28, 2020
RP1-306	Joyce Xi	Union of Concerned Scientists	May 28, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-307	Amol Phadke, Duplicate Submission of RP1-148	LBNL	May 28, 2020
RP1-308	Joyce Xi	Union of Concerned Scientists	May 28, 2020
RP1-309	Sophie Babka	Individual	May 28, 2020
RP1-310	Liset Flores	Individual	May 28, 2020
RP1-311	Kenneth Higa	Individual	May 28, 2020
RP1-312	Noelle Mattock, John B. Allard II	City of Roseville	May 28, 2020
RP1-313	Susan Larsen	Center for Biological Diversity	June 3, 2020
RP1-314	Gabriela Mendez	Individual	June 5, 2020
RP1-315	Elby Chali	Individual	June 5, 2020
RP1-316	Katherine Palomares	Individual	June 5, 2020
RP1-317	Elena Reyes Martinez	University of California, Riverside	June 5, 2020
RP1-318	Kristin Penner	Individual	June 5, 2020
RP1-319	Sally Ahnger	Individual	June 5, 2020
RP1-320	Alex Oseguera	Waste Management	June 5, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-321	Justine Burt	UUCPA	June 5, 2020
RP1-322	Stephen Rosenblum	Individual	June 5, 2020
RP1-323	Judy Young	Individual	June 5, 2020
RP1-324	Michael Fukuyama	350 Bay Area Action	June 5, 2020
RP1-325	Molly Cox	Individual	June 5, 2020
RP1-326	Will Toor	Colorado Energy Office	June 5, 2020
RP1-327	Sophia Wang	Individual	June 5, 2020
RP1-328	Jeb Eddy	Individual	June 5, 2020
RP1-329	Alison Hicks	Mountain View City Council	June 5, 2020
RP1-330	Lucia Marquez	CAUSE	June 5, 2020
RP1-331	Barbara Fukumoto	Individual	June 5, 2020
RP1-332	Bruce Naegel	Individual	June 5, 2020
RP1-333	Mike Balma	Individual	June 5, 2020
RP1-334	Alexa Forrester	Individual	June 5, 2020
RP1-335	Constance Roberts	Individual	June 5, 2020
RP1-336	Mary Dateo	Individual	June 5, 2020

Comment Code	Submitter	Affiliation	Date Received
RP1-337	Debbie Mytels	Peninsula Interfaith Climate Action Organization	June 5, 2020
RP1-338	Susan Dunlap	Project Green Home	June 5, 2020
RP1-339	Suzanne Lande	Individual	June 5, 2020
RP1-340	Gerald Gras	Individual	June 5, 2020
RP1-341	Pradeep Rao	Individual	June 5, 2020
RP1-342	Kurt Kelty	Project Green Home	June 23, 2020

Table G: Written Comments Received at the Second Board Hearing - June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-01	Neyda Gonzalez	Individual	June 25, 2020
B2-02	Erik Casillas	Individual	June 25, 2020
B2-03	Pamela Amaya	Individual	June 25, 2020
B2-04	Sarah Sachs	Ceres	June 25, 2020
B2-05	Sarah Sachs	Ceres	June 25, 2020
B2-06	Derrick Robinson and Joy Williams	Center on Policy Initiatives, Environmental Health Coalition	June 25, 2020
B2-07	Alejandro Amador	Casa Familiar	June 25, 2020
B2-08	Dawn Fenton	Volvo Group North America	June 25, 2020
B2-09	Jane Franch	Numi Organic Tea	June 25, 2020
B2-10	Raj Dhillon	BREATHE California of Los Angeles County	June 25, 2020
B2-11	Jed Mandel	EMA	June 25, 2020
B2-12	Ruby MacDonald	Individual	June 25, 2020
B2-13	Jessica Geiger	Individual	June 25, 2020
B2-14	Jessica Craven	LACDP	June 25, 2020
B2-15	Misha Askren, MD	Sierra Club	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-16	Chris Gilbert	Individual	June 25, 2020
B2-17	Whitney Amaya	Individual	June 25, 2020
B2-18	Stephanie Morris	Mothers Out Front	June 25, 2020
B2-19	Sarah Sachs, Duplicate Submission of B2- 04	Ceres	June 25, 2020
B2-20	Jason Spokes	NELA Climate Collective	June 25, 2020
B2-21	Bridget Cole	LAForward	June 25, 2020
B2-22	Erin Pierce	Individual	June 25, 2020
B2-23- Form	Megan Friend	NRDC	June 25, 2020
B2-23- Form-115	David Patterson	Individual	June 25, 2020
B2-23- Form-190	Georgette Cora	Individual	June 25, 2020
B2-23- Form-971	Susan Bradfield	Individual	June 25, 2020
B2-23- Form- 1008	Christian Blackburn	Individual	June 25, 2020
B2-23- Form- 1162	Jim Stewart	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-23-Form-1291	Richard Star	Individual	June 25, 2020
B2-23-Form-1404	Lynne Latham	Individual	June 25, 2020
B2-23-Form-1467	Dennis Uhlken	Individual	June 25, 2020
B2-23-Form-1503	Peter Warren	Individual	June 25, 2020
B2-23-Form-1725	Scottie Hilleioa	Individual	June 25, 2020
B2-23-Form-1950	Martin Iseri	Individual	June 25, 2020
B2-23-Form-2138	David Sacerdote	Individual	June 25, 2020
B2-23-Form-2194	Cheryl Porter	Individual	June 25, 2020
B2-23-Form-2297	Melody O'neill	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-23-Form-2350	Steve Buckley	Individual	June 25, 2020
B2-23-Form-2604	Cle Betu	Individual	June 25, 2020
B2-23-Form-2634	Elaine Cefola	Individual	June 25, 2020
B2-23-Form-2639	Karin Uphoff	Individual	June 25, 2020
B2-23-Form-2711	Rocco Orsini	Individual	June 25, 2020
B2-23-Form-2714	Rodney Hill	Individual	June 25, 2020
B2-23-Form-2943	Jim Alexander	Individual	June 25, 2020
B2-23-Form-3183	Shirley Freriks	Individual	June 25, 2020
B2-23-Form-3208	Laurel Bergman	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-23-Form-3327	Brent Larsen	Individual	June 25, 2020
B2-23-Form-3517	Jorg and Anke Raue	Individual	June 25, 2020
B2-23-Form-3583	Jill Precheur	Individual	June 25, 2020
B2-23-Form-3685	Daren Black	Individual	June 25, 2020
B2-23-Form-3695	Sheri Cavanaugh	Individual	June 25, 2020
B2-23-Form-3797	Phil Chandler	Individual	June 25, 2020
B2-23-Form-3900	Karen Mathes	Individual	June 25, 2020
B2-23-Form-3973	Carole Grace	Individual	June 25, 2020
B2-23-Form-4108	John Wills	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-23-Form-4126	Melissa Hay	Individual	June 25, 2020
B2-23-Form-4151	Frances Hinckley	Individual	June 25, 2020
B2-23-Form-4195	Robert Burlin	Individual	June 25, 2020
B2-23-Form-5242	Dennis Bicker	Individual	June 25, 2020
B2-24	Frances Armstrong	Individual	June 25, 2020
B2-25	Joseph Dalum	Odyne	June 25, 2020
B2-26	Cheryl Auger	Individual	June 25, 2020
B2-27	Holly Kretschmar	Individual	June 25, 2020
B2-28	Lisa Beebe	I Vote in Every Election	June 25, 2020
B2-29	Elease Stemp	Northeast LA Climate Collective	June 25, 2020
B2-30	Elise Flashman	Individual	June 25, 2020
B2-31	Adam Frankel	Individual	June 25, 2020
B2-32	Jennifer Levin	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-33	Rachel Traub	Individual	June 25, 2020
B2-34	Valerie Hurt	Individual	June 25, 2020
B2-35	Kristy McInnis	Individual	June 25, 2020
B2-36	Bonnie Ho	Individual	June 25, 2020
B2-37	Jack Edit	SoCal 350 Climate Action	June 25, 2020
B2-38	Anna Magnuson	Individual	June 25, 2020
B2-39	Donald Stemp	Individual	June 25, 2020
B2-40	Ryan Kenny	Clean Energy	June 25, 2020
B2-41	Jessica Eason	Individual	June 25, 2020
B2-42	Sharon Lord Greenspan	Individual	June 25, 2020
B2-43	Warren McEwan	Individual	June 25, 2020
B2-44	Amy Francis	Individual	June 25, 2020
B2-45	Scott Miningham	Individual	June 25, 2020
B2-46	Yvonne Martinez Watson	Sierra Club	June 25, 2020
B2-47	Kate Grodd	Individual	June 25, 2020
B2-48	Emily Spokes	NELA Climate Collective	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-49	Daryl Gale	Individual	June 25, 2020
B2-50	David Loughnot	Individual	June 25, 2020
B2-51		This comment was posted then deleted because it was unrelated to the Board item or it was a duplicate.	
B2-52	Laura Shady	NELA Climate Collective, Los Angeles	June 25, 2020
B2-53	Erik Desiderio	Individual	June 25, 2020
B2-54	Tamsin Rawady	Individual	June 25, 2020
B2-55	Rachel Gold	Individual	June 25, 2020
B2-56	Jesse Sanford	Individual	June 25, 2020
B2-57	Ms. Eirene Donohue	Individual	June 25, 2020
B2-58	Joani Woelfel	FARWEST Equipment Dealers Association	June 25, 2020
B2-59	Bridget Moloney-Sinclair	Individual	June 25, 2020
B2-60	Stefanie Leder	Individual	June 25, 2020
B2-61	Kathleen Van Dyk	Individual	June 25, 2020
B2-62	Genevieve Matthews	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-63	Luis Montes	Inside Sustainability SoCal	June 25, 2020
B2-64	Jessica Tardieu Haines	Individual	June 25, 2020
B2-65	Mrs. Tara Strand	Individual	June 25, 2020
B2-66	Amelie Cherlin	Individual	June 25, 2020
B2-67	Leslie Campbell	Sustain LA	June 25, 2020
B2-68	Minta Mullins	Individual	June 25, 2020
B2-69	Nora Goudsmit	Individual	June 25, 2020
B2-70	Ekaterini Kottaras	Individual	June 25, 2020
B2-71	Jessica Judd	Individual	June 25, 2020
B2-72	Nadine Gomes	Individual	June 25, 2020
B2-73	Elizabeth Anderson	Individual	June 25, 2020
B2-74	Sarah Masslon	Individual	June 25, 2020
B2-75	Tara Trudel	Individual	June 25, 2020
B2-76	Mary Lambert	Individual	June 25, 2020
B2-77	Janny Chang	Individual	June 25, 2020
B2-78	Michelle Stockwell	Individual	June 25, 2020
B2-79	Erica Rosbe	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-80	Caitlin Brady	Individual	June 25, 2020
B2-81	Elise Kalfayan	Individual	June 25, 2020
B2-82	Caillie Roach	Individual	June 25, 2020
B2-83	Katharine Reich	Individual	June 25, 2020
B2-84	Joanna Lovinger	Individual	June 25, 2020
B2-85	Colleen Englestein	Individual	June 25, 2020
B2-86	Elizabeth McNamara	Individual	June 25, 2020
B2-87	Sharon Weisman	Individual	June 25, 2020
B2-88	Sara Lee	Individual	June 25, 2020
B2-89	Rachel Angones	Individual	June 25, 2020
B2-90	Lou Rosenberh	Individual	June 25, 2020
B2-91	Brittan Dunham	Individual	June 25, 2020
B2-92	Alissa Dean	Momtivist	June 25, 2020
B2-93	Elisabeth Averick	Individual	June 25, 2020
B2-94	Tiffany Matula	1974	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-95	David Ihlenfeld	Individual	June 25, 2020
B2-96	Christine Cerven	Tobacco Control and Prevention Program, Los Angeles County Department of Public Health	June 25, 2020
B2-97	Jessie Parks	Individual	June 25, 2020
B2-98	Veronica Jauriqui	Individual	June 25, 2020
B2-99	Emiliana Dore	Individual	June 25, 2020
B2-100	Mia Porter	Individual	June 25, 2020
B2-101	Marissa Pinson	Individual	June 25, 2020
B2-102	Monica Campagna	Individual	June 25, 2020
B2-103	Leila Forouzan	Individual	June 25, 2020
B2-104	Alana Langdon	Nikola Corporation	June 25, 2020
B2-105	Katie Covell	NELA Climate Collective	June 25, 2020
B2-106	Julie Mann	Individual	June 25, 2020
B2-107	Maria Kohn	Individual	June 25, 2020
B2-108	Becky Lowitt	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
B2-109	Morgan Walsh	Individual	June 25, 2020
B2-110	Jessie Parks, Duplicate Submission of B2- 97	Individual	June 25, 2020
B2-111	Candace Nycz	Individual	June 25, 2020
B2-112	Brooke Purdy	Individual	June 25, 2020
B2-113	Noelle Lewis	Individual	June 25, 2020
B2-114	Linda Hutchins- Knowles	Mothers Out Front	June 25, 2020
B2-115	Janelle Randazza	Individual	June 25, 2020
B2-116	Guenevere Mesco	Individual	June 25, 2020
B2-117	Andrey Garcia- Ponce De Leon	Individual	June 25, 2020

Table H: Oral comments received at the Second Board Hearing - June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-01	Ms. Dykes	Commissioner of the Connecticut Department of Energy and Environmental Protection	June 25, 2020
T2-02	Ms. Kirby	Assistant Commissioner of the Massachusetts Department of Environmental Protection	June 25, 2020
T2-03	Ms. Hanna	New Jersey	June 25, 2020
T2-04	Mr. Flint	Air Resources in New York State's Department of Environmental Conservation	June 25, 2020
T2-05	Mr. Van Amburg	CALSTART	June 25, 2020
T2-06	Mr. Baguio	Lion Electric Company	June 25, 2020
T2-07	Ms. Fenton	Volvo Group North America	June 25, 2020
T2-08	Mr. Peeples	Alameda Contra Costa Transit District	June 25, 2020
T2-09	Mr. Kenny	Clean Energy	June 25, 2020
T2-10	Mr. Robinson	San Diego Center on Policy Initiatives	June 25, 2020
T2-11	Mr. Magavern	Coalition for Clean Air	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-12	Mr. Mandel	EMA	June 25, 2020
T2-13	Ms. Rosenberger	Fresnans Against Fracking	June 25, 2020
T2-14	Ms. Remillard	Agility Fuel Solutions	June 25, 2020
T2-15	Ms. Marquez	CAUSE	June 25, 2020
T2-16	Mr. Sasseen	Ballad Power Systems	June 25, 2020
T2-17	Ms. Pinto-Cabrera	CVAQ	June 25, 2020
T2-18	Mr. Pingle	Sierra Club California	June 25, 2020
T2-19	Mr. Arago	IBEW Local 11, Latin America Electrical Workers Association	June 25, 2020
T2-20	Ms. Dembrowski	SoCal 350 Climate Action	June 25, 2020
T2-21	Ms. Navarro	Environmental Defense Fund	June 25, 2020
T2-22	Mr. Regalado	Individual	June 25, 2020
T2-23	Ms. Holmes	MEMA	June 25, 2020
T2-24	Mr. Amittay	E2	June 25, 2020
T2-25	Ms. Mellow	Natural Gas Vehicles for America	June 25, 2020
T2-26	Ms. Taylor	Air Quality Program at Washington State Department of Ecology	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-27	Ms. Ponce	CAUSE	June 25, 2020
T2-28	Ms. Agelidis	Los Angeles County Electric Truck and Bus Coalition	June 25, 2020
T2-29	Mr. Munoz	Our People Our Ports Campaign at the Los Angeles Alliance for a New Economy	June 25, 2020
T2-30	Mr. Graham	Coalition of Over 20 Electric Transportation Champions	June 25, 2020
T2-31	Ms. Correa	Brightline Defense	June 25, 2020
T2-32	Mr. McNamara	CR&R	June 25, 2020
T2-33	Mr. Shears	CEERT	June 25, 2020
T2-34	Mr. Corby	CalETC	June 25, 2020
T2-35	Ms. Hoang	Partnership for Working Families	June 25, 2020
T2-36	Mr. Kassakhian	Southern California Edison	June 25, 2020
T2-37	Ms. Austria-Lozoya	IBEW Local 11	June 25, 2020
T2-38	Ms. Bello	CAUSE	June 25, 2020
T2-39	Ms. Lynch	California Waste Haulers Council	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-40	Mr. Flores	Environmental Health Coalition	June 25, 2020
T2-41	Mr. Bouwkamp	California Fuel Cell Partnership	June 25, 2020
T2-42	Mr. Faavae	IBEW Local 11	June 25, 2020
T2-43	Mr. Carmichael	Southern California Gas Company	June 25, 2020
T2-44	Mr. Clements	Hummingbird EV	June 25, 2020
T2-45	Ms. Munguia	CAUSE	June 25, 2020
T2-46	Ms. Sachs	Ceres	June 25, 2020
T2-47	Mr. Schwartz	Tesla	June 25, 2020
T2-48	Mr. Aronin	California Business Alliance for a Clean Economy	June 25, 2020
T2-49	Mr. Zobel	Hydrogen Business Council	June 25, 2020
T2-50	Ms. Camacho	CAUSE	June 25, 2020
T2-51	Mr. Barrett	American Lung Association	June 25, 2020
T2-52	Mr. Lawson	California Natural Gas Vehicle Coalition	June 25, 2020
T2-53	Ms. Donis	East Yard Communities for Environmental Justice	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-54	Mr. Campbell	Clean Energy	June 25, 2020
T2-55	Ms. Aguayo	Greenlining Institute	June 25, 2020
T2-56	Ms. Solomon	Motiv Power Systems	June 25, 2020
T2-57	Mr. Nevers	Rivian Automotive	June 25, 2020
T2-58	Ms. Kropke	Over 400 Union Electrical Contractors	June 25, 2020
T2-59	Ms. Calzada	Individual	June 25, 2020
T2-60	Mr. Kotlier	IBEW and National Electrical Contractors Association of California	June 25, 2020
T2-61	Ms. Williams	Environmental Justice Coalition	June 25, 2020
T2-62	Mr. Sarmiento-Darkin	Hydrogen Mobility	June 25, 2020
T2-63	Mr. Yang	Sierra Club	June 25, 2020
T2-64	Ms. Vidaurre	Center for Community Action and Environmental Justice	June 25, 2020
T2-65	Mr. Wooley	Goldmann School of Public Policy at UC Berkeley	June 25, 2020
T2-66	Ms. Kiliccote	eIQ Mobility	June 25, 2020
T2-67	Mr. Cort	Earthjustice	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-68	Mr. Canon	Port of Los Angeles	June 25, 2020
T2-69	Mr. Harper	California Construction Industrial Materials Association	June 25, 2020
T2-70	Ms. Whittick	California Council for Environmental and Economic Balance	June 25, 2020
T2-71	Mr. O'Dea	Union of Concerned Scientists	June 25, 2020
T2-72	Mr. Portillo	Natural Resources Defense Council	June 25, 2020
T2-73	Ms. Mendez	Center for Community Action Environmental Justice	June 25, 2020
T2-74	Ms. Caplin	Proterra	June 25, 2020
T2-75	Mr. Geller	Manufacturers of Emission Controls Association	June 25, 2020
T2-76	Ms. Dietzkamei	Individual	June 25, 2020
T2-77	Ms. Gonzalez	CAUSE	June 25, 2020
T2-78	Mr. Pickles	Green Grid, Inc.	June 25, 2020
T2-79	Ms. Pardo	Resource Recovery Coalition of California	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-80	Ms. Roberts	Regulatory Affairs for Western States Petroleum Association	June 25, 2020
T2-81	Ms. Dela Cruz-Perez	East Yard Communities for Environmental Justice	June 25, 2020
T2-82	Mr. Maggay	SoCalGas	June 25, 2020
T2-83	Ms. Caswell	Air Quality Practices for the Port of Long Beach	June 25, 2020
T2-84	Ms. Thomas	East Yard Communities for Environmental Justice	June 25, 2020
T2-85	Ms. Silverthorn	Chamber of Commerce	June 25, 2020
T2-86	Ms. Mohan	California Environmental Justice Alliance	June 25, 2020
T2-87	Ms. Deniz-Zaragoza	Warehouse Worker Resource Center	June 25, 2020
T2-88	Ms. Ly	Transpower Meritor	June 25, 2020
T2-89	Ms. Yesenia G.	CAUSE	June 25, 2020
T2-90	Ms. DesChaux	Electric Auto Association of the Central Coast	June 25, 2020
T2-91	Mr. Granholm	Western Propane Association	June 25, 2020
T2-92	Mr. Yow	Port of San Diego	June 25, 2020
T2-93	Ms. Martinez	CAUSE	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-94	Mr. Costantino	Trillium	June 25, 2020
T2-95	Mr. Shimoda	California Trucking Association	June 25, 2020
T2-96	Ms. Nagrani	Individual	June 25, 2020
T2-97	Mr. Marquez	Individual	June 25, 2020
T2-98	Ms. Sandoval	County Member, Youth Leader in San Bernardino, Sierra Club	June 25, 2020
T2-99	Ms. Martinez Watson	Sierra Club	June 25, 2020
T2-100	Ms. Kerridge	350 Bay Area	June 25, 2020
T2-101	Mr. Smith	Teamsters Union	June 25, 2020
T2-102	Mr. Appel	BlueGreen Alliance	June 25, 2020
T2-103	Mr. Ellis	American Honda Motor Company	June 25, 2020
T2-104	Ms. Langdon	Nikola Corporation	June 25, 2020
T2-105	Mr. DeLizo	Individual	June 25, 2020
T2-106	Mr. Abramowitz	Community Environmental Services	June 25, 2020
T2-107	Mr. Sheldon	Individual	June 25, 2020
T2-108	Mr. Villa	Individual	June 25, 2020

Comment Code	Submitter	Affiliation	Date Received
T2-109	Mr. Dalum	Odyne Systems	June 25, 2020
T2-110	Mr. Carr	Shell	June 25, 2020
T2-111	Mr. Benavidez	CAUSE	June 25, 2020
T2-112	Ms. Sanchez	Individual	June 25, 2020
T2-113	Ms. Katherine Garcia	Sierra Club	June 25, 2020
T2-114	Ms. Azamian	Leadership Counsel for Justice and Accountability	June 25, 2020
T2-115	Ms. Balderas	My Generation Campaign	June 25, 2020
T2-116	Mr. Symington	Los Angeles Cleantech Incubator	June 25, 2020
T2-117	Ms. McGhee	GreenPower Motor Company	June 25, 2020
T2-118	Ms. Moran	CAUSE	June 25, 2020
T2-119	Ms. Kavezade	Sierra Club	June 25, 2020
T2-120	Mr. Ross	350 Bay Area Transportation	June 25, 2020
T2-121	Mr. Edgar	Clean Fleets	June 25, 2020
T2-122	Commissioner Lara	ARB Board Member 2017 and 2018	June 25, 2020
T2-123	Ms. Kimberly Garcia	CAUSE	June 25, 2020

Table I: Written Comments Received on the Second 15-Day Changes

Comment Code	Submitter	Affiliation	Date Received
RP2-01	Michael Lee	Individual	October 5, 2020
RP2-02	Doug Scheel	Individual	October 5, 2020
RP2-03	Dwight Johnson	Individual	October 5, 2020
RP2-04	Julie Beer	Individual	October 19, 2020
RP2-05	Ranji George	Individual	October 20, 2020
RP2-06	Socorro Pantaleon	Cucamonga Valley Water District	October 20, 2020
RP2-07	Timothy Blubaugh	Truck and Engine Manufacturers Association	October 20, 2020
RP2-08	Gail Lee	Individual	October 20, 2020

COMMENTS RECEIVED DURING ORIGINAL PROPOSAL'S 45-DAY COMMENT PERIOD

Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements

Comment: Commenter states the ACT regulation should be stronger, making at least 15% of the California fleet ZEVs by 2030 and should include all medium- and heavy-duty vehicles in the requirements starting in 2024. [OP-01, OP-13, OP-28, OP-59, OP-72, OP-78, OP-96, OP-119, OP-123-Form, OP-124-Form, T1-56]

Comment: Commenter states CARB should set a standard to achieve 15% trucks on the road as zero-emission by 2030 to address pollution and climate concerns, as well as helping disadvantaged communities. [OP-01, OP-08, OP-45, OP-55, OP-56, OP-60, OP-62, OP-67, OP-68, OP-73, OP-77, OP-111, OP-112, OP-113, OP-118, B1-13, T1-17, T1-28, T1-33, T1-36, T1-37, T1-48, T1-49, T1-52, T1-53, T1-54, T1-55, T1-58, T1-59, T1-60, T1-61, T1-62, T1-65, T1-72, T1-74, T1-82, T1-88, T1-91, T1-92, T1-94, T1-95, T1-96, T1-97]

Comment: Commenter states that ACT regulation should be stronger, achieving at least 15% of the California fleet as ZEVs by 2030, and should include all medium- and heavy-duty vehicles in the requirements starting in 2024. Commenter outlines examples of how this can be done, discusses the need, supporting ZEV market, and policy drivers. Commenter also provides supporting comments regarding vehicle electrification suitability and model availability, ZEV market updates, favorable ZEV total cost of ownership, utility investments in ZEV infrastructure, and points out health and economic benefits from a stronger regulation.

Additionally commenter states that 15% ZEVs on-road by 2030 is feasible for 8 main reasons: total cost of ownership is positive today for some classes of electric trucks and is becoming more favorable for others; zero-emission trucks are rapidly becoming available; others are already electrifying faster than this proposal, providing Shenzhen's rapid turnover rates as an example; 80% of vehicles needed to meet this goal are currently suitable based on CARB's market assessment, and forecasted improvements make this goal achievable; urgent climate impacts can be mitigated by transitioning to ZEVs; ZE trucks could be outpaced by growth in combustion trucks; air quality and health benefits from transitioning to ZEVs are enormous.

Finally, Commenter states CARB's feasibility concerns about the state of readiness of ZEV technologies are unreasonable, as more vehicle sales could come from Class 4 through 8 category, CARB's feasibility study states more vehicle classes could be electrified if the whole population of all "1 or 2"s were included, and new announcements demonstrate movement in the electric market for sectors CARB deemed less feasible. Additionally, anticipated demand for replacing drayage tractors would exceed commenter's "stronger" scenarios. Commenter states that strengthening

2b-3 category does not necessarily require electrification of pickup trucks. Commenter states CARB's caution due to "edge case assumptions" are unfounded, as commenter's strengthened proposal would only require electrification of less than 15% of pickups on the road by 2030, many of which belong to public fleets or commercial private fleets with use patterns suitable for electrification. Commenter also states that a conservative approach is unreasonable in light of Amazon's order of over 100,000 electric delivery vans to be deployed by 2024. Commenter provided supporting documentation, articles, and references to support their comment. [OP-02, OP-46, T1-10]

Comment: Commenter states CARB should set a more stringent manufacturer standard to get hundreds of thousands of ZEV trucks on the road by 2030 to address increases in goods movement and VMT, and to improve public health. Additionally, commenter states that all truck categories should be included starting 2024. Commenter also states CARB should set a stronger model for other states to adopt. [OP-15]

Comment: Commenter states that 15% ZEVs on-road by 2030 is feasible and necessary for the following reasons: trucks in the San Joaquin valley have easily electrifiable operations; ZE trucks could be outpaced by growth in combustion trucks; to protect environmental justice communities that are disproportionately affected by air quality issues; ZEVs provide air quality and health benefits; the Mobile Source Strategy deficits in PM 2.5 attainment are an opportunity to justify stronger, earlier action in the ACT regulation; and staff rejected the more cost-effective and more health-effective stringent alternative in the SRIA, but commenter believes the ACT regulation has the capacity to provide more relief than the current proposal.

Commenter also states the crediting mechanism coupled with the low sales targets would result in large manufacturers having no incentive to begin development as early as possible, as they could just buy credits from smaller manufacturers to delay product lines. Therefore, stronger sales targets are needed. [OP-28]

Comment: Commenter states CARB should consider increasing the sales requirements for 2b-3 and Tractor categories. [OP-33]

Comment: Commenter states that the regulation should be stronger, achieving higher sales percent targets of the California fleet being ZEVs by 2030 and should include all medium- and heavy-duty vehicles in the requirements starting in 2024. [OP-40, OP-85, OP-86, OP-88, OP-89, OP-90, OP-91, OP-92, OP-114, OP-120, B1-14, B1-15, T1-76]

Comment: Commenter requests that at least 15% of medium- and heavy-duty trucks on the road be zero-emission by 2030, and that Class 2b pickups should be included in the requirement beginning 2024. [OP-41, OP-48, OP-83, OP-117, OP-122, T1-13, T1-17, T1-40, T1-48, T1-98]

Comment: Commenter states CARB needs to move faster on acting on the health problems caused by diesel trucks. [OP-43]

Comment: Commenter states that regulation should be stronger, making at least 15% of the California fleet ZEVs by 2030 and requiring all trucks to comply sooner than 2027. [OP-64, OP-70]

Comment: Commenter states that regulation should be stronger, achieving commitment made by Governor Newsom in December 2017 to have “zero diesel pollution by 2030.” [OP-66]

Comment: Commenter states CARB should expand sales targets for Class 2b-3 pickup trucks to 15% and 60% by 2024 and 2030, respectively. Commenter also states Amazon’s recent purchase of Class 3 delivery vans from Rivian dwarfs the current proposal for the Class 2b-3 sales requirement and threatens to swamp the entire ACT regulation by creating a ZEV credit glut. Commenter states that Class 2a and 2b pick trucks, vans, and SUVs will be unable to rely as heavily on fleet mandates because they are part of a large category that are personal vehicles. For this reason, commenter recommends Class 2b pickup trucks should mirror the Advanced Clean Cars regulation in being the primary driver. Commenter provided supporting documentation, articles, and references to support their comment. [OP-72]

Comment: Commenter states the ACT regulation should be stronger. [OP-75, T1-29, T1-32, T1-34, T1-38, T1-57, T1-63, T1-64, T1-71, T1-73, T1-75, T1-81, T1-83, T1-84]

Comment: Commenter states that regulation should be accelerated, achieving California’s goal of deploying 1.5 million zero-emission vehicles by 2025. [OP-82]

Comment: Commenter states that public investment in infrastructure can support more zero-emission trucks than Staff’s proposal would require. Commenter states setting weak mandates will be detrimental because ZEVs will be outpaced by growth of the freight industry, allow OEM to delay investments in ZE market, and low targets don’t align with California attainment commitments. Commenter states that stronger regulation is achievable by CARB’s own estimates because more trucks are highly suitable for electrification and total cost of ownership shows more indirect cost savings for truck categories. [OP-83]

Comment: Commenter states CARB should adopt regulation to achieve 25% of all trucks as electric by 2030 to meet United Nations IPCC findings that CA must reduce GHG emissions by 50% by 2030. [OP-93]

Comment: Commenter states CARB should consider where the percentages of ZEV trucks sold in each medium- and heavy-duty class can be strengthened and to adopt those higher percentages. Commenter states that medium- and heavy-duty vehicles making up just seven percent of vehicles on the road, release 35 percent of total

statewide NOx, 25 percent of statewide diesel PM emissions, and 23 percent of all on-road greenhouse gas emissions, all of which must be greatly reduced to reach California's greenhouse gas and air quality goals. [OP-94, T1-43]

Comment: Commenter states the proposed ACT regulation could be stronger, as a study commenter conducted comparing the ACT proposal to an alternative that achieves carbon-neutrality for California by 2045 shows potentially up to \$62 billion more savings to California. Additionally, the study shows that ZEVs could be outpaced by growth in combustion trucks. The alternative would result in zero ICE trucks on the road by 2045. CARB should rigorously evaluate a more stringent alternative to consider adopting. Commenter provided supporting documentation, articles, and references to support their comment. [OP-97]

Comment: Commenter states CARB should strengthen the proposed regulation by starting the sales requirement for class 2b-3 pick-ups in 2024, altering the sales requirement to 20% of medium- and heavy-duty vehicles on the road by 2030 are zero-emission. [OP-109]

Comment: Commenter states that regulation should be stronger, making only 4% of the California fleet ZEVs by 2030 is not acceptable and the regulation should include all medium- and heavy-duty vehicles in the requirements starting in 2024. [OP-121-Form]

Comment: Commenter states the ACT regulation should be stronger, making at least 10-15% of the California fleet ZEVs by 2030 and 100 percent of the California fleet as ZEVs by 2045, respectively. [OP-125-Form]

Comment: Commenters in form letter state the ACT regulation should be stronger, committing to higher sales targets for zero-emissions trucks ranging from no specific suggestion up to 50% by 2030 on the road. Commenters also state that pickups should be included starting 2024. [OP-126-Form]

Comment: Commenter states the ACT regulation should be stronger, making at least 15% of the California fleet ZEVs by 2030 is the bare minimum and CARB should aim for 50% by 2025 instead. [OP-126-Form-3484]

Comment: Commenter states the ACT regulation should be stronger, making at least 20% to 30% of the California fleet ZEVs by 2030 and 2035, respectively. [OP-126-Form-3353]

Comment: Commenter urges CARB to strengthen the regulation to result in 15% of trucks on the road in California being zero-emission by 2030. Commenter states that ambitious sales requirements for zero-emission vehicles will feed commercial demand and improve the business case for electric trucks, allowing automakers and companies to capture savings from economies of scale. [B1-09]

Comment: Commenter recommends that the Board identify where the percentages of ZEV trucks to be sold in each medium- and heavy-duty class can be strengthened and to adopt those higher percentages. One example would be to require pickup trucks in Class 2b/3 to be available in 2024, along the same timeline as all of the other classes of trucks, by eliminating their 3-year exemption. [B1-10]

Comment: Comment states concern the current proposal will not be sufficient to reach California's clean air goals and recommends increasing the 15% sales requirement in Class 2b, 3, 7, and 8 categories. Also recommends sales requirement to be periodically reviewed and increased. [T1-02]

Comment: Comment states CARB should aim for 15 percent of medium- and heavy-duty vehicles on the road being zero-emission by 2030 to create jobs. [T1-14]

Comment: Commenter states CARB should mandate ZEV production for all vehicle types beginning in 2024. CARB should adopt higher sales requirements across all vehicle classes. CARB should aim for a rule that targets the market based on where it should be, not a rule that targets simply a floor. [T1-18]

Comment: Commenter states CARB should adopt a stronger rule resulting in hundreds of thousands of zero-emission trucks on the road by 2030. [T1-39, T1-40]

Comment: Commenter states CARB should propose a stronger sales requirement (four to five times the proposed requirement) as battery technology has improved more than Lawrence Berkeley National Labs expected, price reductions are 10 to 15 years ahead of schedule, total cost of ownership is lower than diesel given the right ecosystem. The current proposal is inconsistent with the carbon neutrality order, which requires four to five-fold increase in ZEV sales mandate. The net present value of a climate consistent, stronger proposal would result in benefits of \$60 billion. [T1-45]

Comment: Commenter states that with a low target rule CARB is ensuring that costs will not be brought down as quickly as they could with scaled production and it would allow big trucking fleets to buy all the trucks in the market, while excluding small businesses. The ACT regulation should be stronger because it is feasible, trucks are ready to be electrified, costs are competitive, infrastructure investment are there, and the consumer demand is there. [T1-78]

Comment: Commenter states CARB should include ZEV sales requirement for all truck classes beginning in 2024 and increase the yearly and final percent target goals from 2024 to 2030. Additionally, companies, especially utilities, are eager to electrify their fleets, but are limited by the lack of EV models. [T1-98]

Agency Response: The approved regulation includes a number of modifications to the original proposal in response to comments to significantly increase the number of ZEVs sold in California across all vehicle groups from 2024 to 2030 and to increase the

percentage requirements from 2030 to 2035 rather than keeping them constant during that period. In the Class 2b-3 vehicle group, the ZEV sales requirement for pickups now begins with the 2024 model year rather than excluding pickups until 2027. This change will increase the minimum number of ZEVs required to be sold in the Class 2b-3 vehicle group in 2024 through 2026 and is supported by new information in recent market announcements showing that a number of zero-emission pickup and additional van models will be commercially available from several manufacturers well before the 2024 model year. Changes in the Class 2b-3 vehicle group are necessary to ensure strong market signals align with future demand for ZEVs. The increases in the Class 7 and 8 tractor group sales percentages are necessary to ensure there are sufficient tractor sales to meet the goal of achieving an all zero-emission drayage fleet by 2035 which would directly benefit disadvantaged communities as numerous commenters have requested and to accelerate emission reductions in other areas with high concentrations of truck traffic. In combination, these changes would increase ZEV sales in all vehicle size categories and would provide a clear path towards achieving carbon neutrality by 2045.

In total the approved regulation would result in ZEVs for 15% of the fleet by 2035. The approved regulation does not achieve the same total vehicle sales goal some commenters suggest due to concerns about the feasibility of manufacturers to comply with even higher sales requirements especially for Class 2b-3 vehicles and tractors. At this time, both Class 2b-3 and Class 7-8 tractors have more focused concerns about payload, range, towing, charging/refueling infrastructure, and model availability than other vehicles. These issues will present more challenges in identifying suitable applications for their deployment in the early market. Increasing the number of ZEV sales further also increases the likelihood that manufacturers would need to produce more costly long-range vehicles, and that vehicles may need to be placed in applications where they may not be fully suitable. Therefore, the Board determined that the approved regulation is the most feasible path to meet ZEV deployment goals at this time.

Manufacturer ZEV Sales – Reduce the Number of ZEVs Deployed

Comment: Commenter requests penetration rates of class 8 vocational vehicles be the same as class 7 and 8 tractors. [OP-74]

Agency Response: No changes were made in response to this comment. This suggestion would reduce the number of ZEVs sold in the Class 4-8 category and is counter to the Board direction from the first hearing. At the hearing, the Board directed staff to increase the number of ZEVs deployed in California in all categories. See rationale for increasing ZEV sales in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements

Comment: Commenter states CARB needs to analyze the vocational vehicle sector and examine additional factors to determine how quickly a transition to ZEVs technology can occur in different classes. [OP-84]

Comment: Commenter states specific commercial fleet types and applications should be identified and prioritized for an optimized introduction of ZEV trucks. If CARB continues down the current two-track regulatory path for MD and HD vehicles, there is a real chance that manufacturers will be forced out of California market. Low product volume and the high number of different commercial vehicles applications makes unilateral, broad-based and naked ZEV sales mandate inherently impractical. CARB should direct staff to develop a more strategically focused regulation coupling ZEV sales mandate with specific fleet applications, including provisions and incentives to cover marginal costs of purchasing ZEVs and infrastructure, and better coordinate and take into consideration adverse impacts of both a heavy-duty duty on highway ZEV sales mandate and Low NOx Omnibus regulation. Sales mandates directed at beachhead markets should be coupled with a ZEV purchase mandate applicable to the operators of the target fleets of commercial trucks. [OP-87]

Comment: Commenter recommends pairing incentives and fleet requirements with manufacturer requirements to promote market acceptance of electrified products. Commenter urges CARB to execute market-enhancing policies such as incentives, to promote electrification purchases in all segments affected, and invest in the needed infrastructure for the high energy requirements of heavy-duty use cases and ensure availability in both urban and rural areas. Commenter states that a stable policy implemented alongside the ACT rule that hits all market segments impacted, especially in the pickup segments with its large share, would establish a market for electrified heavy-duty product and a more successful ACT regulation. Commenter states that if staff cannot implement the needed (and promised) fleet purchase mandates in time, ACT requirements should be reevaluated. [B1-11]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes that some use cases may be more favorable than others and considered this in establishing the minimum ZEV sales requirement and the framework of the regulation. The approved regulation includes flexibility for manufacturers to produce and sell ZEVs into the market segments they deem to be most suitable for the products they manufacture. Specifically, the regulation provides flexibility for manufacturers to shift sales between weight classes, to bank and trade credits, to earn early credits, and to meet part of their compliance obligation with near-zero-emission vehicle sales that have a minimum all-electric range. This approach also recognizes that a single chassis can be used in multiple configurations and sold into multiple vehicle market segments. In summary, the approved regulation will ensure that

manufacturers develop competitive ZEV products at price points that will meet fleet needs.

The Board directionally agrees with the concept of using both manufacturer and fleet rules to develop the medium- and heavy-duty ZEV market; however, the Board does not agree they need to be approved at the same time. The Board provided direction in the resolution to return with a ZE fleet rule by the end of 2021 that would begin implementation in 2024, the same initial implementation date as the manufacturer rule. In the resolution, the Board directed staff to work towards a goal to transition key market segments to zero-emission including drayage, first/last mile delivery, refuse, buses, utility, and government fleets.

Before fleets can purchase zero-emission vehicles, they need products available from major manufacturers that will be supported by a robust service and maintenance network. But to date, the major manufacturers have been relatively absent in this space despite the need for zero-emission technology. Up to this point, smaller startup truck manufacturers have stepped in to fulfill market demand and have been designing zero-emission trucks for a number of years. The majority of these startup companies do not have broad dealer networks or regional service facilities that can be leveraged quickly to provide support and maintenance services for zero-emission technology. Many have also lacked the ability to deliver very large orders for major fleets; additionally, several of these start-ups have failed and gone out of business despite having large orders. This has hampered ZEV expansion for early adopter fleets.

The manufacturer sales requirement was developed first because manufacturers need sufficient lead time to research and develop products, perform validation, work with suppliers and establish production lines and a suitable repair and maintenance network prior to production and sale of ZEVs.

Manufacturer ZEV Sales - EMA Proposal

Comment: Commenter states that it wishes for CARB to work with the EMA and other interested stakeholders through the 30-Day Notice process to identify those specific segments of the heavy-duty market that are more readily amenable to electrification, and move forward with 100 percent sales mandates in those segments. The 100 percent mandates would achieve or even overachieve the volumes and time frames the staff is proposing. Commenter believes that the ACT regulation should be focused on mandating the use of ZEV technologies in prioritized, specific segments that are more readily suited to that technology, even earlier than the staff is proposing. Commenter believes this approach would allow specific markets to identify incentives and infrastructure needs while creating beachheads for ZEVs in California. Commenter states that new school buses and municipal fleet step vans could be 100 percent ZEVs in 2023. That in 2024, a 100 percent of new public utility vehicles and yard tractors can be ZEVs. That in 2025, 100 percent of the new step vans, airport service vehicles, and

non-airport shuttle buses can be ZEVs. And that in 2026, 100 percent of refuse trucks can be ZEVs. [B1-05, T1-19]

Comment: Commenter states CARB should work with industry and other stakeholders to develop a more focused approach to the ZEV sales requirement which focuses on early adoption in best fit markets, and couples incentive policies to the rule. [T1-11]

Comment: Commenter agrees with Volvo, the rule should have used a focused approach based on certain categories. Commenter agrees with the EMA proposal specifically regarding further segmentation. [T1-79]

Comment: Commenter states CARB should to continue to work on the EMA proposal "beachhead strategy" moving forward with the regulation. Commenter states that the average fleet is struggling to comply with the Truck and Bus regulation and there are approximately 82,000 non-compliant vehicles. Commenter states that the Truck and Bus Regulation is dominated by small businesses and they will have trouble adjusting to the ACT rule. [T1-80]

Agency Response: No changes were made to the regulation in response to these comments. Staff worked with EMA at the Board's direction to assess the feasibility of EMA's proposal. Several key issues make the EMA proposal unfeasible. First, because the proposal requires 100% of sales and purchases be ZEV, it would by default necessitate a fleet rule. Modifying staff's proposal to incorporate the EMA proposal would require expanding the rule's scope to include an entirely new set of stakeholders that have not been noticed about this rulemaking. This would require an entirely new rulemaking and delay the proposal until at least mid-2021 to allow for re-noticing to a much broader population of stakeholders. This is inconsistent with the Board direction for a swift and strengthened proposal to be brought forth.

Additionally, staff and EMA could not find a way to ensure 100 percent of all affected fleets would be able to meet their operational needs with available vehicles. A 100 percent requirement in any sector would mean all fleets must purchase only ZEVs, including small fleets, fleets who cannot install infrastructure to electrify, fleets who have variable operation or must respond to emergencies require widespread infrastructure buildout to account for all use-cases, which would not be feasible by the suggested beginning timeframes in 2023. Some sectors including pickups, vans, and tractors do not easily fit in a 100 percent requirement as the vehicles produced can be used in a wide variety of applications. Finally, staff expects the market to gravitate toward beachhead categories on its own, as the nexus of favorable economics, centralized infrastructure, and ZEV-friendly use cases would create market opportunities for businesses to capitalize on.

Manufacturer ZEV Sales – Add Off-Ramps to the Proposal

Comment: Commenter states CARB should add off-ramps to suspend the ZEV sales mandate if adequate fleet-rule purchase mandates and ZEV infrastructure installations are not in place by 2024. [OP-87]

Comment: Commenter recommends the incorporation of review mechanisms into the regulation that assess both market acceptance of electrified products and infrastructure (lead time and availability), and adjust requirements accordingly. Commenter recommends that CARB consider battery technology (cost, capacity, energy density, specific energy, etc.), customer demand, purchase mandates, and the number of charging stations as objective metrics to assess rule success. If these metrics fall short of expectations, commenter recommends that CARB postpone implementation of the heavy-duty mandate or reduce the number of ZEVs required. Commenter provided supporting documentation, articles, and references to support their comment. [B1-11]

Agency Response: No changes were made to the regulation in response to these comments. The Board determined that developing regulatory off-ramps as suggested is unnecessary and is counter to the goal of providing certainty to the market. The Board approved the regulation without off-ramps to ensure that vehicle manufacturers, suppliers, and infrastructure manufacturers have certainty in making long-term investments needed to ensure large-scale deployment of ZEVs in California.

The regulation's structure gives manufacturers flexibility to bank credits, shift sales between weight classes, and trade credits with other manufacturers. These flexibility provisions give manufacturers assurance that they can comply and does not introduce the uncertainty associated with potential off-ramps.

Manufacturer ZEV Sales – Total Cost of Ownership Concerns for Pickups

Comment: Commenter states that even with the overly optimistic assumptions in CARB's Total Cost of Ownership (TCO) calculator, a conventional Class 2B-3 pickup truck is still less expensive to operate than a ZEV pickup in the 2024 through 2030 timeframe. When CARB's assumptions are corrected to maintain the towing and hauling capacity, the battery size increases 2.5 times. Using the TCO calculator default assumptions with the increased battery size, a Class 3 pickup truck would cost \$32,000 more than a conventional truck (a 66% increase). [OP-87]

Comment: Commenter recommends aligning phase-in of pickup and pickup-based products with cost of ownership based on true heavy-duty hauling and towing capability. Commenter states that CARB's analysis was missing for the pickup based portion of the heavy-duty market that span Class 2b-5 segments which make up more than one-third of California's total heavy-duty sales. Commenter states that this analysis, shows that BEV pickup applications are cost negative, even when assuming small battery sizes that limit capability and purchase incentives unlikely to be available to most pickup

purchasers. Commenter states that when assumptions are corrected, the cost penalty for BEV heavy-duty pickups increases and capability is still compromised. Commenter recommends that that Class 2b/3 pickup sales requirements start in 2027MY and also recommends the Board consider expanding this timing decision to pickup-based Class 4/5 vehicles. Commenter provided supporting documentation, articles, and references to support their comment. [B1-11]

Comment: Commenter states that CARB's analysis indicates higher lifetime costs for electrified HD pickup trucks. Commenter states that CARB's TCO model suggests that electrified class HD pickup trucks have higher costs than their conventional counterparts throughout the entire period of the ACT policy (2030), even when considering LCFS savings. Commenter states that the lack of a positive total cost of ownership for prospective HD pickup truck consumers even in 2030 is particularly striking given the assumptions that favor electrification throughout the analysis. Commenter states that there are several TCO assumptions that are unrealistic for HD pickup trucks, suggesting that the actual lifetime costs for a fully electric pickup is even less favorable. These unrealistic TCO assumptions include inadequate range and battery capacity, the lack of resources by small fleets to monetize LCFS credits, and the 12-year vehicle lifetime is overstated. [B1-16]

Agency Response: No changes were made to the regulation in response to these comments. Staff disagrees with the premise that the early ZE truck market will need to serve use cases that require the maximum possible range and hauling capacity for a given vehicle type and for that reason did not include it as a representative scenario in the cost analysis. To the extent that some applications such as pickups used for towing and hauling are not suitable to electrify or are significantly more costly, manufacturers can focus their efforts on other use cases that are more suitable for electrification. The approved regulation will ensure that manufacturers develop competitive ZEV products at price points that will meet fleet needs.

The Class 2b-3 costs listed in the Staff Report were estimated based on lower range vans because vans commonly travel shorter distances, often return to base and have lower towing demands than other trucks. Staff foresaw this as being the most likely market for early ZEV deployments and based the cost assumptions on this. However, in the months since the Staff Report was released, there have been a number of announcements regarding zero-emission pickup trucks, described in further detail in Attachment B of the 30-Day Changes, indicating staff may have been too conservative in assuming the possible number of Class 2b-3 sales.

Furthermore, the regulation's structure gives manufacturers flexibility to bank credits, shift sales between weight classes, and trade credits with other manufacturers. This means that a manufacturer who sells pickups, vans, and trucks can meet their compliance obligation by producing ZE vans and trucks without producing any ZE pickups for a number of years if there are better markets to serve or can purchase

credits from other manufacturers regardless of the truck types they sold to earn their credits.

Manufacturer ZEV Sales – Operational Challenges for Electrification of HD Pickups

Comment: Commenter states that CARB's analysis shows barriers to near-term electrification of HD pickups. For example, CARB's analysis shows that 99% of California pickups by end use and annual sales volume are not well suited to near-term electrification. As shown in CARB analysis, the relatively poor scores for pickups are due to a combination of factors including range, route variability, infrastructure, and battery space constraints. Commenter states that there has been some confusion in workshops and stakeholder meetings about the distinction between fully capable HD pickups used as "work trucks" and their light-duty (LD) counterparts. Commenter states that it is important for policymakers to continue to distinguish the very different abilities, requirements, and use cases of LD (class 2a) pickup trucks vs. HD (class 2b/3) pickup trucks, and to avoid conflating the near-term promise of greater LD electrification with the ill-suited nature of most HD pickup trucks. [B1-16]

Agency Response: No changes were made in response to this comment. As noted in Appendix E to the Staff Report, staff recognizes that Class 2b-3 pickups face additional challenges to electrification. However, staff's updated analysis in Attachment C to the 30-Day Changes shows that Class 2b-3 pickups are showing greater feasibility than modelled in the Staff Report. Based on this updated analysis, higher requirements on Class 2b-3 vehicles are feasible.

Furthermore, the regulation's structure gives manufacturers flexibility to bank credits, shift sales between weight classes, and trade credits with other manufacturers. This means that a manufacturer who sells pickups, vans, and trucks can meet their compliance obligation by producing ZE vans and trucks without producing any ZE pickups for a number of years if there are better markets to serve or can purchase credits from other manufacturers regardless of the truck types sold to earn their credits.

Manufacturer ZEV Sales – Higher Costs Are Barrier to ZEV Deployment

Comment: Commenter states that the most widely recognized barrier to the deployment of ZEV MD and HD vehicles is their substantially higher cost compared to their conventional counterparts. Commenter states that the cost to purchase and deploy an advanced technology vehicle is greater than just the incremental cost. Fleets pay increased sales tax on a more expensive vehicle and face other costs associated with new technologies, such as training and adapting to new maintenance procedures. Commenter states the ability to support California's transportation needs has not been demonstrated for electric MD and HD vehicles. [B1-07]

Agency Response: No changes were made to the regulation in response to this comment.

Staff's methodology to evaluate costs was to look at both the cost to the state as a whole and to look at the total cost of ownership for a vehicle. This method illustrates the costs to both California and a typical fleet. Through these analyses, staff found that while zero-emission vehicles will cost more upfront due to higher vehicle costs and additional infrastructure costs, they will cost less over their lifetime due to lower fuel costs, LCFS revenue, and reduced maintenance expenses. ZEVs placed into well-suited applications will see a positive TCO versus their diesel counterparts, and more applications will show a payback over time as ZEV costs decline.

Staff held numerous workgroup meetings to discuss what cost assumptions to use and what applications to evaluate. Staff used the best available information to evaluate costs. While there are many unknowns regarding future costs, staff does not agree that is too premature to develop a cost model to inform the Board's decision.

Lastly, the regulation does not place a requirement on fleets to purchase ZEVs. Therefore, fleets will only purchase ZEVs if it is economical to do so or if they have a different reason e.g. sustainability goals.

Manufacturer ZEV Sales – Maintain Delayed Timeline for Pickups

Comment: Commenter supports exempting pickup trucks in class 2b-3 group until 2027. [OP-99] [B1-11]

Comment: Commenter states that the incorporation of HD pickup trucks should not occur any earlier than proposed by CARB staff. Commenter states that the ACT policy as proposed would fall unevenly in volume on HD pickup trucks due to the disproportionate number of these vehicles within the combined class of heavy-duty vehicles targeted by the ACT policy (~8,500 lbs. GVWR). For example, national registration data obtained by General Motors for the 2018 calendar year suggests that approximately 65% of the vehicles targeted by the ACT would be made up of class 2b/3 pickup trucks alone. Commenter states that arguably, the proposed MY 2027 start date is insufficient given the unique challenges of this market, and commenter encourages the Board to consider a start date such as the 2030 model year or a slower phase-in given operational challenges, total cost of ownership, and a relative lack of policies to support demand in the HD pickup market. [B1-16]

Agency Response: No changes were made to the regulation in response to these comments, but changes were made to the 2b-3 group in response to Board direction. Staff modified the original proposed start date for Class 2b-3 pickups to be consistent with Board direction and new information about zero-emission pickups. For staff's justification for removing the delayed timeline for pickup trucks, see chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer

ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales – Insufficient Lead Time

Comment: Commenter referenced section 202(a) (42 U.S.C. § 7521(a)) of the Clean Air Act that requires that EPA give a minimum of four full years of lead time before new heavy-duty vehicle emission standards can take effect and because of this requirement, the proposed regulation would be invalid under federal law. [OP-87]

Agency Response: No changes were made to the regulation in response to this comment. The lead-time provisions of section 202(a)(3)(C) of the Clean Air Act (CAA) do not apply to the ACT regulation. Section 202(a)(3)(C) only applies to standards “promulgated or revised under this paragraph [section 202(a) of the CAA],” that is, to standards promulgated by the Administrator of the U.S. EPA. Since CARB adopted the ACT regulation pursuant to authority of California state law and the waiver provisions of section 209(b) of the CAA, the lead-time requirement simply does not apply.

Since 1970, U.S. EPA has typically applied a “2-pronged” test of whether California standards are consistent with CAA section 202(a) as required by section 209(b)(1)(C). The standards must be: (1) technologically feasible in the lead time provided considering the cost of compliance, and (2) compatible with the federal test procedures so that a single vehicle could be subjected to both tests. No more should be required. This is in accord with the legislative history of section 209. When the California waiver provisions and the “consistent with section 202(a)” language were first placed in the CAA in 1965, section 202(a) consisted of just one sentence requiring adequate lead time in consideration of technological feasibility and economic costs. In the 1977 CAA amendments, Congress amended section 209 “to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.” (H. R. Rep. No. 294, 95th Cong., 1st Sess. 301 (1977), reprinted in 4 Leg. Hist. at 2768.) At the same time, Congress expanded section 202(a) to add several directives to U.S. EPA regarding its adoption of emission standards, including the 4-year lead time requirement for heavy-duty vehicles. Given Congress’s expressed intent to strengthen the waiver provisions, it is unlikely Congress intended to apply the specific 4-year requirement to California.

Moreover, the Board directed staff, to the extent it is necessary, to either request a waiver or a confirmation that the regulations are within the scope of an existing waiver of federal preemption pursuant to section 209(b) of the Clean Air Act.

Manufacturer ZEV Sales – Exempt Class 8 Vocational Vehicles

Comment: Commenter states that Class 8 vocational vehicles have general operational characteristics that are less favorable for electrification because they have multiple types of unpredictable routes, greater concerns about payload, varied daily range

needs, stop-and-go operations, and return to multiple locations daily where they can be charged or fueled. Therefore, they should not be included. [OP-81]

Agency Response: No changes were made to the regulation in response to this comment. As part of the rulemaking process, staff worked closely with stakeholders to develop a market segment analysis that can be found in Appendix F to the Staff Report. This analysis assessed 87 market segments in the Class 2b-8 market and assessed their suitability for electrification based on payload issues, daily range, infrastructure access, and space considerations. The analysis found that while many segments present challenges, there are a large number of segments that are well suited for electrification across the medium- and heavy-duty truck market. In particular, refuse trucks, yard trucks and box trucks are well-suited for electrification within the Class 8 vocational market. The suitable market for ZEVs is expected to expand further as ZEV technology improves, access to infrastructure expands and ZEV weights decline. Excluding all Class 8 vocational vehicles is unnecessary and is counter to the Board direction because it would reduce the number of ZEVs deployed. Furthermore, the regulation's structure gives manufacturers flexibility to bank credits, shift sales between weight classes, and trade credits with other manufacturers to meet their compliance obligations.

Manufacturer ZEV Sales – Exempt Agricultural Trucks and Other Vehicles with Potential Barriers

Comment: Commenter asks for an exemption from sales requirement for "vehicles such as agricultural light duty trucks, which will likely face challenges with infrastructure". [OP-108]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation does not define vocation-specific requirements for manufacturers; instead, it allows manufacturers to evaluate their product portfolio and customer base to determine which vehicles they should electrify. As a result, the proposal does not require manufacturers to sell to vocations that are not well-suited for electrification. To the extent that some applications such as agricultural trucks are not easy to electrify, manufacturers can focus their efforts elsewhere. As a result, there is no need to exempt specific vehicles as the proposal does not pigeonhole manufacturers into selling any particular vehicle.

Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels

Comment: Commenter states that the ACT regulation could achieve 25-50% market penetration by 2025 by including class 7-8 low NOx trucks with renewable fuel that meet or exceed the 0.02 g/bhp-hr NOx standard. Commenter states that including such low NOx trucks would help to surpass the projected emission reductions sought by the ACT regulation. Commenter recommends adding a partial credit for the inclusion of heavy-duty low NOx trucks. Commenter recommends that the proposed credit generation

system exist up until CARB implements a new heavy-duty emission standard for internal combustion engines that meets or exceeds the 0.02 g/bhp-hr NOx standard. Commenter states that the proposed credit generation system would expire when the heavy-duty ZEV market has matured in cost, performance, infrastructure, and availability metrics. [OP-07, B1-12]

Comment: Commenter states that low NOx engines using renewable fuels should be included in the ACT regulation, as they are one of the most cost-effective near-term remedies for existing NOx and GHG emissions. [OP-11, T1-42]

Comment: Commenter states CARB should encourage all low carbon/sustainable fuels rather than focusing exclusively on zero-emission technology solutions. Commenter states CARB should allow ultra-low NOx vehicles to acquire credits, at least in the short term, as a single transportation technology may not be the correct strategy in many instances. [OP-32, T1-12]

Comment: Commenter states that Low NOx engines should be included in the rule strategy. [OP-44]

Comment: Commenter states that Low NOx engines should generate credits if deployed sooner than the proposed Low NOx Omnibus rule. [OP-60]

Comment: Commenter states that Low NOx trucks running on renewable gas should generate manufacturing credits just like plug-in hybrid electric vehicles. [OP-63]

Comment: Commenter suggests that both Zero-emission and Low NOx truck strategies be included in the proposed ACT Regulation. [OP-79, OP-80]

Comment: Commenter states that including low NOx class 4 - 8 trucks that meet or exceed the 0.02 g/bhp-hr NOx standard and use renewable fuel could achieve 25-50% market penetration by 2025 while surpassing the projected emission reductions sought by the regulation. [OP-80]

Comment: Commenter suggests the ACT regulation and the Low NOx Omnibus rule should be coordinated to better assess the combined aggregate costs and feasibility issues. [OP-87]

Comment: Commenter states they believe that near-zero technologies are being overlooked and need to be considered as an important pathway to achieving the goals from the proposed regulation. [OP-105]

Comment: Commenter suggest that alternative fuel vehicles should be included in the rule until a secure reliable updated electrical grid is in place, as the commenter doesn't want to be enslaved by an electric choice that does not address the reality that oil-based fuel has been reliable. [OP-121-Form-277]

Comment: Commenter recommends CARB remain open to additional technology options in its pursuit of a net-zero vehicle emission future and that additional compliance pathways are included into the ACT proposal. Commenter suggests that CARB consider partial compliance of ZEV mandates via ultra-low NOx trucks fueled by low to net zero carbon fuels under the ACT or a complementary in-use fleet regulation. [B1-04, T1-08]

Comment: Commenter recommends CARB staff work with SCAQMD staff to determine fleet makeup to reach the 2023 standard and the 2031 standard for ozone attainment through strong incentive programs to replace diesel vehicles with commercialized technologies that are currently available, like ultra-low NOx natural gas engines. [T1-01]

Comment: Commenter states that renewable propane has carbon intensity similar to that of electric and including this with low NOx vehicles would significantly decrease carbon and NOx emissions. Commenter recommends including both zero-emission and low NOx strategies in the ACT regulation. [T1-16]

Comment: Commenter states CARB should include SCAQMD's definition of near-zero which includes the strictest optional low NOx standards for Class 7-8 trucks. Commenter states that incorporating ultra-low NOx trucks into the proposed near-zero standards means more choice and flexibility for fleet operators, addresses impacts to communities, meets CARB's main objective cleaning the air, and provides a pathway for the rule to be strengthened. [T1-21]

Comment: Commenter states that drayage industry already invested in near-zero (not CARB's definition) vehicles in Southern California so they should be allowed to fulfill operational obligations. The CTA would like to include all modes of zero and near-zero (not CARB's definition) technology. [T1-46]

Comment: Commenter states that instead of getting 15 percent by 2030, by doing near-zero and RNG in-state, we can get 50 percent by 2025 and implement SB 1383. [T1-49]

Comment: Commenter states that Low NOx engines have already been invested in and they provide significant benefits. There is uncertainty that commenter will get full lifecycle out of investments made in natural gas. [T1-69]

Agency Response: No changes were made to the regulation in response to these comments. This regulation constitutes one component of CARB's measures intended to achieve emissions reductions from medium- and heavy-duty vehicles, and the fuels they use. The purpose of the ACT regulation is to accelerate the widespread adoption of zero-emission vehicles (ZEVs) in the medium- and heavy-duty truck sector to reduce harmful emissions from on-road mobile sources beginning with the 2024 model year. The primary objectives of the ACT regulation identified in the Staff Report include the following:

- Accelerate first wave of zero-emission (ZE) truck deployments in best suited applications;
- Achieve 100 percent zero-emission pickup-and-delivery in local applications by 2040;
- Support the Ports of Los Angeles and Long Beach Clean Air Action Plan for 100 percent zero-emission drayage trucks by 2035;
- Support AB 739 requiring California state government fleets to purchase ZEVs;
- Enable a large-scale transition to zero-emission technology;
- Maximize the total number of ZEVs deployed;
- Complement existing and future programs;
- Provide environmental benefits, especially in disadvantaged communities thereby supporting the implementation of AB 617;
- Ensure requirements are technologically feasible and cost effective; and
- Foster a self-sustaining zero-emission truck market.

Emissions associated with new heavy-duty diesel and Otto-cycle engines used in on-road heavy-duty vehicles are being addressed by other policies and rulemaking actions, including the Low NOx Omnibus rulemaking and the existing Low Carbon Fuel Standard regulation.

The Low NOx Omnibus rulemaking primarily requires engine manufacturers to reduce the emissions of their new heavy-duty engines starting in the 2024 model year, and includes provisions for manufacturers to earn credit for the early introduction of cleaner engines or certifying engines to more stringent emission standards. The new standards would reduce emissions from all combustion engines sold in California, so that all engines will have similar emissions to those that are being referred to as low NOx engines today. By 2024 when the ACT regulation begins, all conventional internal combustion engines will be required to certify to a 0.05 gram of NOx per brake horsepower-hour standard, by 2027 all conventional internal combustion engines will be required to certify to a 0.02 gram of NOx per brake horsepower-hour standard. To the extent that manufacturers elect to certify and introduce engines that meet more stringent NOx emission standards or that meet more stringent NOx emission standards before specified timelines, they can generate credits under the credit provisions established by the Low NOx Omnibus rulemaking. Allowing manufacturers to also generate credits under the ACT regulation would unreasonably allow manufacturers to double the quantity of credits they are entitled to, which would in effect undermine CARB's goals in enacting both the Low NOx Omnibus and the ACT regulation – to significantly decrease emissions from on-road heavy-duty vehicles operating in California.

Furthermore, providing credit in the ACT regulation for engines that simply meet the NOx emission standards set by the Low NOx Omnibus rulemaking would offset ZEV sales that have no exhaust emissions, and would accordingly achieve fewer emission

benefits and would be counter to the Board direction to maximize the number of zero-emission vehicles sold.

As for comments about low carbon fuels, the Low Carbon Fuel Standard regulation is already reducing lifecycle emissions from transportation fuels and the benefits resulting from that regulation cannot be claimed again as suggested by several commenters. The LCFS requires fuel producers and importers to reduce the carbon intensity of their transportation fuels and includes a credit mechanism to provide flexibility to regulated parties to meet the standard. This framework results in a strong market-based incentive for low carbon fuels including biofuels, electricity, and hydrogen which can generate credits to be sold to other regulated parties for their compliance. However, the benefits from switching from conventional fuels to a low carbon fuel of the same type have already been attributed to the LCFS regulation as described in the 2018 LCFS Staff Report and cannot be counted again in another regulation. Therefore, RNG and other low carbon fuels that are produced and sold as a result of the LCFS regulation would not result in new benefits by including these fuels in the ACT regulation. Conversely, when estimating the benefits of the LCFS regulation and its amendments, staff recognized that the LCFS regulation by itself would not be sufficient to encourage fleets to switch to zero-emission vehicles because it means fleets would need to switch to a new vehicle technology and a new fuel type rather than switch to a low carbon variant of the same fuel. Therefore, the low carbon fuel benefits from operating ZEVs was not included in the LCFS and are properly attributed to the ACT regulation and results in benefits that have not been previously claimed by another regulation. Therefore, the commenter's suggestions to include low NOx engines and low carbon fuels would only duplicate what is already expected from the LCFS and the Low NOx Omnibus rulemaking and would not result in any new emission benefits for NOx nor GHG emissions beginning in 2024 which is the timeframe of the approved regulation.

Manufacturer ZEV Sales – Allow More Technologies and/or Fuel Options

Comment: Commenter states that the proposed sales mandates in the ACT are extremely ambitious. Commenter states that until CARB and the manufacturers are able to collaboratively show that these goals are achievable at some reasonable point in time, commenter urges CARB not to shut the door on continued advances in the portable transportation fuels market. Commenter states that putting all of California transportation fuel needs in one basket is a mistake, at least until it can be adequately demonstrated that ZEVs are cost-effective, reliable and feasible. [B1-07]

Agency Response: No changes were made to the regulation in response to this comment. See staff discussion on how the ACT regulation has the primary purpose of expanding electrification in California, but is one of a suite of CARB efforts to reduce emissions from vehicles and fuels, in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels”.

Manufacturer ZEV Sales – Low NOx Needed for Long-Haul

Comment: Commenter states that Low NOx engines provide a backstop if commercial ZEVs are not available by 2024 for long-haul fleets. [OP-07]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that long-haul will be one of the more challenging sectors to electrify. Staff evaluated that long-haul fleets are challenging to electrify in Appendix E to the Staff Report due to the range and infrastructure concerns associated with long-haul. Due to these challenges, staff proposed lower requirements in the Class 7-8 tractor requirements than in other categories. To the extent that some applications such as long-haul tractors trucks are not easy to electrify, manufacturers can focus their efforts elsewhere. Staff anticipates manufacturers can meet the requirements with drayage and short-haul trucks in the near-term and expanding to regional haul over time.

In August, staff presented a complementary Low NOx Omnibus rulemaking to the Board which requires the remaining combustion-powered vehicles to transition to cleaner possible combustion technologies. This supporting regulation will work in conjunction with the ACT regulation to reduce the emissions of hard-to-electrify segments such as long-haul.

Manufacturer ZEV Sales – Near-Zero-Emissions Vehicle Definition

Comment: Commenter states that the proposed ACT regulation restricts the definition of "near-zero" to only "plug-in hybrids with some all-electric range", purposely omitting low NOx vehicles. Commenter states that there is a long history of low NOx vehicles being included in the definition of "near-zero". For instance, the South Coast Air Quality Management District includes it in the definition of the Indirect Source Rules. CARB in agency documents have also included it at various times. And even opponents do refer near-zero -- as near-zero for low NOx vehicles. [OP-07, T1-41]

Comment: Commenter states that any new definition of "near-zero" should be vetted through a separate public process because the ACT usage is inconsistent with generally accepted use and severely limits its application. [OP-44]

Comment: Commenter states the redefining the definition "near-zero" should be reconsidered. Commenter states that several agencies use "near-zero" as having 90 percent reduction or better. Using the definition outlined in funding plan would redefine what "near-zero" means to the general public and state and local policymakers. [OP-63, T1-66]

Comment: Commenter is perplexed why the regulation interprets the term "near-zero" to apply only to plug-in hybrids with some "all-electric range". Commenter requests current proposed regulation emulate the current definition of near-zero. [OP-81]

Comment: Commenter states it is time to reinforce the existing 'near-zero' definition in statute coupled with an in-state RNG requirement to restore the HVIP funding that was discontinued at the October 2019 CARB meeting. Commenter states the need to include the low NOx engine into the near-zero definition. Commenter also supports the comments submitted by Solid Waste Association of North America (SWANA) and the California Refuse Recycling Council (CRRRC). [OP-101, T1-49]

Comment: Commenter states CARB should revise the definition of "near-zero" to include low NOx engines. [OP-106]

Comment: Commenter states that the ACT regulation restricts the definition of "near-zero" to only "plug-in hybrids with some all-electric range", purposely omitting low NOx vehicles. Commenter states that there is a long history of low NOx vehicles being included in the definition of "near-zero". Commenter states the proposal's definition of near-zero should change because it conflicts with zero and near-zero definitions in AB 2061, which provides a weight exemption for alternative fuel vehicles. Commenter states that the conflicting definitions could result in confusion for CHP enforcement at weight scales. [B1-12, T1-44]

Comment: Commenter states CARB should include SCAQMD's definition of near-zero which would include low NOx and offer more choice and flexibility for fleet operators to offset diesel. [T1-21]

Agency Response: No changes were made to the regulation in response to these comments. The term "near-zero" has been used in different ways depending on the specific program and its meaning has evolved over time. For the purpose of this regulation, near-zero-emission vehicles (NZEV) are plug-in hybrid electric vehicles powered by both an internal combustion and battery-electric powertrain that are capable of operating like as a zero-emission vehicle for some distances. NZEVs are considered a bridge technology which will help the development of the full ZEV market by electrifying sectors not well suited to full electrification and supporting the ZEV supply chain.

The definition of "near-zero-emission vehicle" used in the ACT regulation is designed to apply to 2024 and later when all new engines sold are expected to have significantly lower emissions as required by the Low NOx Omnibus rulemaking. At that point, it is not meaningful to include solely combustion-powered vehicles in the definition of "near-zero-emission vehicles" as all new vehicles will meet or be close to the commenters' "near-zero" definition. Staff's definition is appropriate for the timeframe that the rule will be implemented in.

Manufacturer ZEV Sales – Credit for Conventional Hybrids

Comment: Commenter states that all hybrid technologies should be placed on an equal regulatory footing and should eliminate the negative crediting of hybrids. Also,

commenter suggests CARB should allow hybrids to earn credits based on their relative reduction of GHGs. [OP-84]

Comment: Commenter recommends CARB to allow hybrid electric vehicles as defined in the Phase 2 GHG regulation to earn partial credits for a portion of ZEV compliance. [B1-04, T1-08]

Agency Response: No changes were made to the regulation in response to these comments. Conventional hybrid technologies have been commercially available in the heavy-duty sector for over a decade at this point, and other regulations including the California and Phase 2 GHG regulations already incentivize their purchase and use. Because the objective of the ACT regulation is to foster the deployment of zero-emission technologies, hybrid vehicles without zero-emission capability are not sufficient to meet the regulation's goals. Plug-in hybrid vehicles meeting a minimum all-electric range requirement are a bridging technology that can offer zero-emission capability in applications that are not currently suitable for ZEVs; as a result, staff is giving partial credit for these near-zero-emission plug-in hybrids.

Manufacturer ZEV Sales – Add Credit for Electrified Power Take Off

Comment: Commenter states CARB should encourage creative solutions that could have near-term impact on existing emissions including technologies that reduce idling emissions from work trucks, such as electric power take-off. [T1-79]

Agency Response: No changes were made to the regulation in response to this comment. The regulation is designed to enable a large-scale transition to zero-emission technologies in the medium- and heavy-duty truck market. Vehicles that cannot operate part-time as a pure ZEV are not considered to be “near-zero” in the approved ACT regulation. Hybridization and ePTO technologies are already commercially viable without incentives and awarding credit for them would decrease the number of ZEVs produced.

Manufacturer ZEV Sales – Support Credit for Plug-in Hybrids

Comment: Commenter states general support for the PHEV credits currently allowed the proposed ACT regulation, and strongly supports the proposed sliding scale for NZEV crediting. [OP-50, T1-20]

Comment: Commenter supports regulation goals and sales requirements, and the inclusion of PHEVs as credit generators. [OP-61]

Comment: Commenter recommends that PHEV technology should be equated to BEV technology for 2024-30MYs as a bridge to full electrification and remain in place until battery technology (including charging) enables BEVs to be viable in the marketplace.

Commenter provided supporting documentation, articles, and references to support their comment. [B1-11]

Comment: Commenter states that many applications can be done much better with plug-in electric vehicles, especially in the fleet truck market, and that zero-emission miles accumulated are more important. [T1-09]

Comment: Commenter states CARB should encourage creative solutions that could have near-term impact on existing emissions, such as credits for plug-in hybrids. [T1-79]

Agency Response: No changes were made to the regulation in response to these comments. The objective of the ACT regulation is to foster the deployment of zero-emission technologies. Plug-in hybrid vehicles meeting a minimum all-electric range requirement are a bridging technology that can offer zero-emission capability in applications that are not suitable for ZEVs; as a result, staff is giving partial credit for these near-zero-emission plug-in hybrids. Staff views hybrid technology as a bridge technology, and will need full ZEVs everywhere feasible to meet CA air quality goals. Parallel hybrids cannot guarantee zero-emission miles and were not included.

Manufacturer ZEV Sales – Extend Sunset Date for Plug-in Hybrids

Comment: Commenter states that PHEV credits should sunset in 2040 instead of 2030, due to the following factors: the urgency of climate and AQ needs; the need for flexibility and a technology neutral approach to reducing emissions; the need for near-zero-emission vehicles for cases where full ZEVs are not yet suitable; better economical choices for low-income truck owners; reduced infrastructure burden. [OP-50]

Comment: Commenter states CARB should remove the restriction in § 1963.2(b) that eliminated the generation of NZEV credits after 2030. [OP-87]

Comment: Commenter states there are many applications that can be done better with long range plug-in hybrid trucks or strong PHEVs that annually get 90% to nearly 100% of their miles from electric energy. However, strong PHEV's need to be encouraged through this regulation with better incentives and no sunset date on eligibility. [B1-03]

Agency Response: Changes to the regulation were made in response to these comments. The Board approved changes to extend the timeframe that NZEVs can earn credits from 2030 to 2035. Plug-in hybrid or NZEVs may perform a key role as a bridging technology in allowing vehicles which cannot be fully electrified to transition to zero-emission in some capacity. This provides a partial zero-emission option for use cases that have highly variable uses or are not as suitable for electrification in the early market. At the same time, minimum all range was extended from the 2030 MY to the 2035 MY and the minimum all-electric range was changed to begin at 10 miles in 2021 but was increased to 75 miles in the 2030 model year to increase zero-emission mile operation. NZEV credits would end after the 2035 MY.

Manufacturer ZEV Sales – Extra Credit for ZEVs Deployed Before 2024 Model Year

Comment: Commenter states that ZEVs should generate additional credits if deployed sooner than the proposed ACT regulation. [OP-60]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation already allows manufacturers to earn credit for ZEVs sold starting in the 2021 MY and grants these credits a longer life. Adding a multiplier to these credits would decrease the number of ZEVs a manufacturer would be required to produce and may decrease the total number of ZEVs deployed into California. In addition, manufacturers at this point have most likely locked in their production plan for the 2021-2023 model years so adding a multiplier would not spur additional action.

Manufacturer ZEV Sales – Avoid Multipliers for ZEVs Based on Range

Comment: Commenter states CARB should maintain the proposed one credit for each ZEV to avoid multipliers for longer range vehicles. [OP-33]

Agency Response: Staff thanks the commenter for the supporting comment.

Manufacturer ZEV Sales – Extra Credit for ZEVs Based on Range

Comment: Commenter recommends adding a range modifier or range multiplier for class 7 and 8 trucks that rewards the sale of long range zero-emission trucks. [OP-63, T1-66]

Agency Response: No changes were made to the regulation in response to this comment. Because of a number of issues associated with crediting ZEVs based on range, staff's proposal awards the same amount of credits regardless of the vehicle's all-electric range capability. First, manufacturers are already announcing single-unit trucks with over 200 miles of range and tractors with ranges of 500 miles. This indicates that range is not a technological issue; rather, it is a question of tradeoffs between cost, payload, and other factors as well as the availability of infrastructure. In this setting, fleets can analyze their operational needs and purchase the ZEV with enough range capability to meet those needs. If the regulation were to award more credit for longer range vehicles, this may lead to marketplace distortions as manufacturers are incentivized to build longer range vehicles than is necessary. This may lead to potential scenarios where fleets are forced to pay more for capabilities they do not need. For example, fleets that plan to rely more on opportunity charging (e.g., transit buses charging at each bus stop) may not need as much range from a vehicle compared to fleets that plan on depot charging their vehicles (e.g., vehicles return to a home base and charge overnight). Lastly, there is no test procedure in place for measuring the zero-emission range of zero-emission heavy-duty vehicles. A ZEV test procedure would require testing a fully manufactured ZEV on a dynamometer or modelling the vehicle's performance using simulation software. These solutions raise

issues as a full chassis dynamometer test is costly and there are limited facilities to perform these tests for heavy-duty vehicles, and the data does not exist currently to model range with the resolution needed.

Manufacturer ZEV Sales – Clarify Deficit Generation Language

Comment: Commenter states CARB should modify § 1963.1(a)(1)(B) to clarify how deficits are calculated, specifically whether they are calculated per vehicle or across all sales. [OP-87]

Agency Response: Staff has modified the language to clarify how deficits are calculated. Each vehicle produced and delivered for sale in California generates deficits based on the ZEV sales percentage requirement and the appropriate Weight Class Modifier. The annual deficit is the sum of all deficits generated in a given model year.

Manufacturer ZEV Sales – Clarify All-Electric Range Definition

Comment: Commenter states CARB should modify § 1963.2(b)(1) by adding language to clarify that manufacturers may determine “all-electric range” in the same manner as GHG certification, including the test procedure. [OP-87]

Comment: Commenter states that the NZEV Factor formula changed from a battery capacity-based formula (in prior ACT regulatory workshops) to an all-electric range (AER) based formula. Commenter requests that CARB clearly indicate the exact AER test procedures to be used for chassis and engine dyno certified NZEV applications. [B1-11]

Agency Response: Staff has modified the definition of “all-electric range” and added a subsection describing “minimum all-electric range” requirements in response to these comments. These requirements are consistent with the California Phase 2 GHG requirements for measuring all-electric range and defining a minimum all-electric range until 2030.

Manufacturer ZEV Sales – Extend Credit Lifetime

Comment: Commenter states CARB should extend the credit lifetime in § 1963.2(g)(2) to allow ZEV credits to be used for five model years after the year in which they are generated, like the GHG rule at 40 C.F.R. § 1036.740(d). [OP-87]

Agency Response: Staff has modified the credit life provisions in response to this comment. In staff’s original proposal, the credit lifetime was five years from the start of the model year while the Phase 2 GHG rules set the credit lifetime as being five years starting from the end of the model year. To harmonize with the Phase 2 Greenhouse Gas rules, staff has modified the ACT regulation’s credit lifetimes so they are calculated from the end of the model year they are generated, not the beginning. This modification effectively extends the credit lifetime by one year. Staff does not anticipate this change

will have adverse impacts as the stringent ZEV sales requirements will necessitate manufacturers use their credits rather than bank them excessively.

Manufacturer ZEV Sales – Extend Deficit Makeup Period to Three Years

Comment: Commenter states CARB should extend the requirement in § 1963.3(b) so a manufacturer must make up a deficit within three model years, like the GHG rule at 40 C.F.R. § 1037.745(e). [OP-87]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation uses the same one-year deficit makeup period as the light-duty ZEV regulation. By requiring deficits be made up in a timely manner, the regulation ensures that manufacturers are building sufficient ZEVs to meet the state's goals. Extending the deficit makeup period to three years incentivizes delaying ZEV deployments and potentially damaging the overall zero-emission market. This modification would create unnecessary uncertainty for minimal benefit and therefore has not been incorporated.

Manufacturer ZEV Sales – Modify Credit Retirement Order

Comment: Commenter states CARB should modify § 1963.3(c) to allow manufacturers more flexibility in using credits before they retire. [OP-87]

Agency Response: Staff has modified the credit retirement order specified in section 1963.3(c) during the 30-Day Modifications in response to this comment. The modified credit retirement order states that the earliest expiring credit will be used first. This ensures that manufacturers will have assurance that their credits generated will not be wasted due to the order that credits are retired.

Manufacturer ZEV Sales – Allow Credit Transfer into Class 7-8 Tractor Group

Comment: Commenter requests that Class 8 straight truck credits be allowed free movement into the Class 7-8 tractor category, and requests credits from lower classes be restricted, capped, or otherwise limited (beyond weight class modifiers) in their ability to meet deficits in the class 8 vocational and class 7-8 tractor category. [OP-74]

Comment: Commenter states CARB should remove the restriction in § 1963.3(e) and allow a manufacturer to use straight truck credits to make up tractor deficits. [OP-87]

Agency Response: Staff made changes to the regulation to allow a limited amount of credits to be used towards meeting tractor deficit requirements. This directionally aligns with the commenter's request. The purpose of limiting the transfer of credits into the tractor group is to ensure that ZE Class 7 and 8 tractors are produced. Ensuring ZE tractors are deployed is critical to the regulation's goals as these vehicles are the largest emitters and are the most common vehicle for drayage operation. Allowing manufacturers to use non-tractor credits to meet their tractor requirement will increase

the flexibility offered to them but would simultaneously reduce the amount of ZE tractors deployed. By allowing a limited number of credits to transfer from non-tractors to meet tractor-deficits, the proposal allows some flexibility to adjust to the market while ensuring ZE tractors are produced.

Manufacturer ZEV Sales – Move Reporting Date

Comment: Commenter states CARB should modify § 1963.4(a) to clarify that manufacturers must report by March 31 following the end of each model year. [OP-87]

Comment: Commenter suggests rewording section 1963.4(a) Sales Reporting. Beginning with the 2021 Model Year, a manufacturer must report by March 31 of the calendar year after each model year, the following information to CARB for each type of vehicle certified to California standards and sold in California for each model year. [B1-11]

Agency Response: Staff has modified the regulation in response to these comments so information is due by March 31 following the end of each model year rather than 90 days after the end of each model year. This effectively moves the reporting deadline back one day. This modification improves consistency between the ACT regulation and the Phase 2 Greenhouse Gas regulation.

Manufacturer ZEV Sales – Remove Zero-Emission Powertrain (ZEP) Certification Requirements

Comment: Commenter states that mandating ZEP certification combined with the broader sales mandates will unnecessarily inhibit technology development and result in hybrid vehicles generating negative credits. Commenter also states CARB is contradicting a major part of ZEP certification rationale and is concerned with it becoming a "mandatory certification process" for manufacturers subject to the new sales mandate, and states that ZEP certification should not be mandatory as part of the proposed regulation. Instead CARB should retain ZEP certification as an alternative certification method. [OP-84]

Agency Response: No changes were made to the regulation in response to this comment. The ZEP certification procedures are critical in ensuring manufacturers are developing quality products for consumers through its provisions. Specifically, the ZEP certification establishes an alternative certification pathway for HDEVs and HDFCVs that would help reduce the variability in the quality and reliability of such vehicles, ensure information regarding such vehicles and their powertrains are effectively and consistently communicated to purchasers, and accelerate progress towards greater vehicle reparability. ZEP certification requirements include: compliance with applicable emission standards, durability for the useful life of the engine, applicable labeling requirements, emissions warranty to the vehicle purchaser, and compliance with on-board diagnostic requirements. By incorporating ZEP certification into the ACT

regulation, staff can ensure that fleets can expect a basic level of manufacturer support. Because the regulation does not require ZEP certification until 2024 MY, it gives manufacturers time to deploy vehicles in the early market but ensures full certification once the regulation begins requiring production at scale.

Manufacturer ZEV Sales – Wait for Results of Demonstrations

Comment: Commenter urges CARB to postpone the final development and Board approval of the regulation (not the date of its implementation), or at least build some flexibility into the rule until more can be learned from the state’s current Zero- and Near-Zero-Emission Freight Facilities (ZANZEFF) investments. [OP-74]

Agency Response: No changes were made to the regulation in response to this comment. Meeting the goals laid out in the Staff Report – accelerating the first wave of ZE trucks, providing environmental benefits specifically to disadvantaged communities, fostering a large-scale transition to ZEV technologies, among others –requires immediate action. Waiting on the results of the ZANZEFF programs is inconsistent with these goals and not necessary given that the rule’s requirements do not begin until 2024. Manufacturers and fleets have time to implement the ZANZEFF programs and incorporate findings from the programs into their future deployments. The ACT regulation is not dependent on the ZANZEFF and the Board gave clear direction to staff not to delay this rulemaking. Staff will be using information gathered through ZANZEFF and other demonstrations or pilot projects as we consider fleet mandates to deploy ZEVs in applications most suitable for their use.

Manufacturer ZEV Sales – Proposal Not Backed by Data or Analysis

Comment: Commenter states the timing for ZEV technology will vary considerably among different vehicle types and more analysis could provide additional insight into the ability of various market segments to transition to EV technology. Additionally, CARB's analysis doesn't have enough data to make such assessments on vehicle truck segments. Commenter requests CARB gather more data and analysis on suitability of ZEVs for different market sectors rather than finalizing the sales mandate and new reporting obligations concurrently. Commenter also requests CARB to, immediately at beginning of the rule, ensure the market signal delivered is based on thorough consideration of the technical, economic and operational challenges that remain for ZE vocational vehicle fleets. [OP-84]

Comment: Commenter states the proposed ACT regulation lacks a sufficient basis in data or robust market analysis and projections, and states assumptions used to assess TCO of battery-electric medium-duty and heavy-duty vehicles fails to fully recognize the importance of battery capacity for work trucks and overestimates the benefits of available government incentives. [OP-87]

Comment: Commenter states that the rule's timeline and feasibility studies appear to be based upon assumptions that may not reflect the realities of implementation. Commenter states that it seems unreasonable to mandate ZEV vehicles that MD and HD trucking fleets may not be able to use for their particular application. For example, remote or rural trucking operations may not be able to access charging infrastructure, and the batteries used in those trucks to support a feasibility determination may not support the payload and daily activities for which those trucks are typically purchased. [B1-07]

Agency Response: No changes were made to the regulation in response to these comments. The approved regulation does not require any individual fleet to purchase ZEVs. The approved regulation will ensure that manufacturers develop competitive ZEV products at a price point that will meet fleet needs in the market segments they chose.

Staff disagrees that the regulation does not adequately support its assumptions on technology, timing, and cost. As part of CARB's rulemaking process, staff held multiple workshops and workgroup meetings for the Proposed ACT Regulation. Staff held multiple workgroups on ZEV suitability, cost assumptions and methodology, and other key inputs to refine the assumptions and ensure we were using the most up-to-date information possible. To assess the feasibility of ZEV technology, CARB developed Appendix F to the Staff Report which assesses the feasibility of 87 different market segments in the medium- and heavy-duty market and grades their suitability. The methodology for the cost analysis is detailed in Chapter IX of the Staff Report and evaluates the cost to manufacturers to sell the required number of ZEVs, as well as the costs and savings to California businesses to support and operate ZEVs. An analysis of costs to a typical fleet can be found in Appendix H to the Staff Report.

Because the ACT regulation is a manufacturer rule, manufacturers need to identify market segments they can compete in and offer competitive products that fleets will want to purchase. Broadly, vehicles used for local delivery appear better suited while work trucks present more challenges. Manufacturers most likely will not target market segments poorly suited for electrification and will instead focus on the ones that electrification is best suited for.

As more information becomes available, staff will incorporate these new findings into new rulemakings. Staff did not assume any grants or rebates in the statewide cost analysis.

Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks

Comment: Commenter is concerned with electric-powered refuse equipment and the current market hasn't demonstrated they can meet certain duty cycle requirements for waste management. Commenter additionally states that staff suitability factors did not properly reflect the suitability weighting of Class 8 integrated solid waste management

vehicles and that suitability scores of 1 or 2 for refuse or solid waste vehicles, to be dramatically overstated. [OP-81]

Comment: Commenter states they aren't convinced by the HD readiness now or in future due to duty cycle of collection vehicles and the weight penalty associated with collection systems. Commenter additionally states CARB should not be able to push ZEV technology onto refuse fleets if the ZEV technology is not reasonable, achievable, and cost-effective. Commenter recommends CARB could report back to the Board every 5 years to allow time for the refuse fleets transition off of NGVs. [OP-101]

Agency Response: No changes were made to the regulation in response to these comments. The approved regulation does not require any individual fleet to purchase ZEVs. The approved regulation will ensure that manufacturers develop competitive ZEV products at a price point that will meet fleet needs in the market segments they chose.

Broadly, the market segment analysis was used to inform decisions on the approved ZEV percentages. The market segment analysis in the Staff Report evaluated the suitability of refuse trucks in Appendix F: Market Segment Analysis. Staff found that refuse trucks are generally well suited for electrification and the assessment was informed by early ZE truck demonstrations and announcements by major truck manufacturers including Mack, Peterbilt, Lion Electric, and BYD and the City of Los Angeles commitment to make a full transition to a zero-emission refuse fleet by 2035 after conducting its own demonstration.

Manufacturer ZEV Sales – Infrastructure Concerns

Comment: Commenter states that infrastructure remains a challenge to deploy ZEVs. [OP-07]

Comment: Commenter recommends that a formal structure and process are created wherein CARB, CEC, CPUC and other relevant agencies are accountable to coordinate and plan charging infrastructure. Commenter states that permitting and other local government entitlement delays given the complexity of organizations involved and their unfamiliarity with the technologies can threaten timeline availability for heavy-duty EV's. [OP-74]

Comment: Commenter recommends CARB to continue and expand work with CPUC, CEC, and utilities on holistic long-range planning needs for infrastructure and workforce deployment. [OP-99]

Comment: Commenter states that ZEV sales requirement should include more charging stations to help develop a network before the regulation is adopted. [OP-121-Form-277]

Comment: Commenter states that infrastructure needs to be built out before the current proposal can be successful. [OP-123-Form-1161]

Comment: Commenter states that current proposal should increase the number of fast chargers and put them in strategic locations to help increase access to ZE charging. [OP-123-Form-42]

Comment: Commenter states that the high costs of infrastructure is an important barrier, particularly for zero-emission technologies, and the cost of providing hydrogen and electricity. Fleets face uncertainty on electric charging connection standards, which complicates deployment timing and future fleet expansion. [B1-07]

Comment: Commenter states that CARB could also provide credit for low power, bi-directional and wireless charging for these trucks and other electrified vehicles because of the benefits to the electric grid. [B1-03]

Comment: Commenter states there is a lack of dedicated funding for and access to heavy-duty ZEV infrastructure which are essential for vehicle operation and rollout. Some related items include accurate measurement and sale of fuel as well as policies facilitating rollout of infrastructure and vehicles. [T1-05]

Comment: Commenter states that extensive and costly infrastructure is needed for ZEVs, and that without incentives to offset those differentials, customers either will keep their old products longer or, given the choice, which the proposed regulation allows, will buy new diesel-fueled vehicles. Commenter also states that focusing the funding and infrastructure development in markets most amenable from their operating characteristics to being able to operate on ZEVs will seed the market and will allow us to better focus our efforts to further expand that market beyond 2026. [T1-19]

Comment: Commenter states CARB should, as a part of this rulemaking, assess the adequacy of infrastructure particularly for electric grid improvements vs hydrogen non-grid alternatives to ensure the ZEVs that are deployed as a result of the regulation do not become stranded assets. [T1-86]

Agency Response: Staff recognizes that a streamlined infrastructure rollout is critical for the success of an expanding ZEV market but no changes were made to the regulation in response to these comments. The ZEV sales percentage targets were based on the assumptions of return-to-base operations where infrastructure would be installed by the fleet. The market can expand faster with a broader network of public charging beyond what the regulation requires.

CARB and its sister agencies are coordinating policies to ensure a smooth transition to zero-emission vehicles. The California Public Utilities Commission and California Energy Commission are developing policy frameworks and assessments to support long-term infrastructure development plans. The California Public Utilities Commission

has begun work on its draft Transportation Electrification Framework which is a policy framework intended to streamline upcoming investor-owned utility programs while providing metrics and guidance. The framework is designed to offer a holistic strategy for addressing how the state's IOUs will support California's clean transportation and climate goals.

Additionally, pursuant to Senate Bill 350, following approval by the California Public Utilities Commission, the state's three major investor-owned utilities have invested nearly \$700 million over the next five years to support medium-duty, heavy-duty, and off-road transportation electrification. These investments are meant to cover all customer-side costs up to the charger and may offer a rebate for the charger itself.

The California Energy Commission, pursuant to AB2127, is developing a biannual infrastructure and energy demand assessment for electric vehicles in all categories including medium- and heavy-duty. This assessment will identify infrastructure needs as well as gaps which will help inform utilities on the investments needed in their service territories. The needs for depot charging and charging along freight corridors will be evaluated as part of these assessments. The information gathered through the Large Entity Reporting can assist our sister agencies in developing these documents and future efforts. These agency actions are part of a holistic effort by the state to streamline and support electric vehicle infrastructure for heavy-duty vehicles. The CEC is also evaluating resiliency and ZEVs which is discussed further in chapter "Written Comments Received during the 30-Day Comment Period", section "Economic Analysis – Fleet Infrastructure Resilience".

The CEC has also recently held a workshop discussing energy resilience and ZEVs. This July 2020 workshop invited several speakers to present on their view on resilience. Some speakers including Envision Solar, FreeWire, and Toyota highlighted different technology solutions including mobile chargers, chargers with battery storage and solar capability, and mobile hydrogen refuelers. Others highlighted the opportunities that vehicle grid integration and bidirectional charging can offer, with the California Transit Association stating that an integrated solution of solar, energy storage, and electric buses can provide resiliency while significantly reducing energy costs. A different presenter from the Blue Lake Rancheria showed how they were able to use ZEVs to support their microgrid during the recent power shutoff events through bidirectional charging, indicating that potential challenges resilience planning is causing, but others pointed out that ZEVs can be more resilient than other vehicles, and in some situations with vehicle grid integration, can support the grid during potential power shutoff events. The presenter Next-Dimension highlighted that ZEVs can be a solution to the state's challenges, but doing so will require coordination from state agencies, vehicle manufacturers, emergency responders, and utilities. The information gathered through the ACT Regulation's Large Entity Reporting requirements will also assist our sister agencies in developing these documents and future efforts. These agency actions are

part of a holistic effort by the state to streamline and support electric vehicle infrastructure for heavy-duty vehicles.

The Governor's Office of Business and Economic Development, or GO-Biz, is working with municipalities to implement AB 1236 which requires local governments to streamline permitting processes for all types of charging stations. While streamlining permitting will require changes at the local level, action is begin taken today and many issues are expected to be resolved by the time the regulation's requirements begin.

Numerous commenters have suggested awarding credits within the ACT regulation for deploying chargers or infrastructure. Making this modification would allow vehicles to generate a smaller portion of the required credits and effectively decrease the amount of credits needed from vehicles and decrease the number of ZEVs deployed by the regulation. For this reason, staff has not modified the regulation to allow credits for infrastructure as this can be done more effectively through collaboration with our sister agencies and industry than through the ACT regulation.

Manufacturer ZEV Sales – Grid Resiliency

Comment: Commenter states electricity is not a reliable energy source. [OP-18, OP-21]

Comment: Commenter states the proposed regulation would require electrical energy supply and/or on-site battery backup charging infrastructure to meet the mandated public health and environmental protection services such as homeless encampments, fires, and disaster readiness. [OP-81]

Comment: Commenter states concern about the State's existing electrical infrastructure with blackouts and its ability to address a broader deployment of ZEVs. [OP-101]

Comment: Commenter states that the recent performance of California's electricity infrastructure in the wake of natural or climate driven disasters is not impressive. [B1-07]

Agency Response: No changes were made to the regulation in response to these comments. The California Public Utilities Commission's draft Transportation Electrification Framework, noted in the preceding agency response, explicitly identifies resiliency as a focus for the utilities and discusses vehicle to grid integration, micro grids, backup generation by diesel or fuel cell generators, and other solutions. The CPUC is currently soliciting stakeholder input and intends to finalize the Transportation Electrification Framework after incorporating this feedback. The CPUC has also started a rulemaking process regarding microgrids and resilience as directed by SB 1339. The CPUC has released its Track 1 decision as of June 2020 and has issued the scoping memo for Track 2 of this rulemaking. This work on microgrids will bolster resiliency and help support vehicle applications which rely on the grid. Lastly, as part of San Diego Gas & Electric's SB350 program, the CPUC approved a V2G pilot using buses to

evaluate how these vehicles can provide energy to the grid and potentially boost resilience.

See discussion on the work California is undertaking to bolster resilience and the role of ZEVs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Fleet Infrastructure Resilience”.

Manufacturer ZEV Sales - Credit for Off-Road Yard Tractors

Comment: Commenter states that small manufacturers should generate credits through sale of off-road yard tractors. [B1-02]

Agency Response: No changes were made to the regulation in response to this comment. The main difference between on-road and off-road yard tractors is whether it is equipped with safety equipment to legally operate on-road e.g., turn signals and whether it is powered by a cleaner on-road engine or dirtier off-road engine. For zero-emission vehicles, there is no emissions difference between an on-road and off-road yard tractor and the only difference is the safety equipment installed. Staff anticipates manufacturers will choose to make all zero-emission yard tractors on-road capable to earn credit in the proposal.

Manufacturer ZEV Sales - Credit for Small Manufacturers

Comment: Commenter suggests that small manufacturers should be allowed to opt-in early and generate credits. [B1-02]

Agency Response: Staff’s proposal allows small manufacturers who are otherwise exempt from the proposal’s requirements to voluntarily generate credits, therefore no changes were made to the regulation in response to this comment. This approach maintains necessary exemptions for small manufacturers while allowing these manufacturers to capitalize on their ZEV investments.

Manufacturer ZEV Sales – Small Manufacturer Considerations

Comment: Commenter states that Autocar qualifies as a small business under the Small Business Administration size criteria that set the standard for GHG, and consistent with California's Government Code. In drafting the ACT, CARB was required to determine whether the adoption of the regulation affected a small business. Commenter states that they were not contacted by CARB staff, and staff confirmed that they did not expect Autocar sales would exceed 500 on-road vehicles annually based on data they had. Thus, with respect to Autocar, CARB has not met its requirement to determine whether the ACT affects small business.

Commenter states that the ACT's ZEV production requirements and time line will impose disproportionately high burdens on a small business like Autocar, which produces small volumes of a select few product lines. The lack of product mix denies

Autocar the benefit of averaging and aggregating credits. The low overall volume denies Autocar the benefit of banking credits and prevents it from spreading development and compliance costs across many vehicles. In contrast, competitors will spread such costs across tens of thousands of vehicles and multiple product lines, and with vertical integration and robust purchasing power, the competition will gain a competitive advantage over its "small town" competitor.

Commenter states that a small business cannot utilize the credit/deficit flexibilities built into the ACT regulation. Commenter states that in the Staff Report, CARB staff describes the weight class modifiers that "provide flexibility for manufacturers to produce more ZEVs in one group to avoid making a small number of ZEV sales in other groups." This construct acknowledges that certain ZEV applications will take longer than others to bring to market (or even that electrifying some vehicles will be "avoided" altogether), and assumes that all manufacturers have products in multiple classes. Commenter states that the flexibility afforded Autocar's competitors is unavailable to Autocar and other (typically smaller) manufactures that do not have large, diverse product lines. [B1-02]

Comment: Commenter states the threshold for the small manufacturer exemption should be raised to a level that captures small businesses. Commenter recommends revising Section 1963(e) as follows: "Manufacturers that never exceed 1,500 annual average sales of Class 2b and greater vehicles in California for the three prior model years are exempt from the requirements of sections 1963 through 1963.5" with other conforming changes. Commenter states that the revision will provide sufficient time for small manufacturers to invest the necessary resources and time to develop ZEV versions. Commenter states that without this exemption they may be forced to stop selling vehicles in California as they see many product lines remaining as diesel or gas sales. [B1-02, T1-07]

Agency Response: No changes were made in response to these comments. Staff's recommendation of a cutoff of 500 annual sales is based off of data received from EMA and DMV and is designed to ensure all major OEMs are included in the manufacturer ZEV sales requirements. Staff is meeting original intent to have all major OEMs included in the manufacturer ZEV sales requirements based on sales data received from EMA and cross referenced with DMV. The low volume exemption was created for niche and nascent businesses. This ensures an even playing field across the industry. It is not reasonable to exempt specific vehicle types, as this provides manufacturers maximum flexibility to determine how to comply. Multiple vehicle types can be built on the same chassis.

Staff notes that AB 1033 (2016) defines a small business for the purpose of regulatory analyses as one that meets three criteria: is independently owned and operated, is not dominant in its field, and consists of 100 or fewer employees. Autocar is a subsidiary of GVW Group LLC and is not an independently owned and operated company, nor have

they demonstrated that they have 100 or fewer employees. Based on this, Autocar does not meet the definition of a small business for purposes of this rulemaking.

Manufacturer ZEV Sales - Require Small Manufacturers to Provide Updates

Comment: Commenter suggests that any manufacturer subject to the small manufacturer exemption should be required to provide semi-annual reports on their progress towards ZEV development, including information such as time lines and stage development by product line, number of ZEVs produced, status of pilots and demos, engine manufacturer interaction, body company involvement, and customer outreach efforts. [B1-02]

Agency Response: No changes were made to the regulation in response to this comment. All manufacturers must report their ZEV sales to earn credits. Small manufacturers are already required to report annual information under the California Phase 2 GHG regulation, and CARB will be able to track their vehicle sales and the number of ZEVs sold into California each year. There is no need to increase the reporting frequency or breadth.

Manufacturer ZEV Sales – Set Performance-based Metrics for ZEVs

Comment: Commenter states CARB should establish standards for ZEVs in this rule to drive continual improvement and innovation in clean mobility. These can include battery performance standards, such as lifecycle emission reduction goals, range requirements, and short and long-term deterioration limits. [T1-08]

Agency Response: No changes were made to the regulation in response to this comment. The regulation makes the Zero-Emission Powertrain Certification program requirements mandatory for manufacturers to earn credits. This program does not have performance standards, but does have performance disclosure and warranty requirements. There is no need to set minimum performance standards in this regulation nor the certification program, because the market will favor product offerings that meet customer needs.

Manufacturer ZEV Sales – Gradual Electrification Ramp Rates

Comment: Commenter recommends gradual electrification ramp rates. Commenter states that the typical product development cycle is four years, consumer awareness and acceptance require months if not years of sustained effort, and that the necessary charging infrastructure requires time to install. This market hesitation points to the need for gradual sales ramp rates to accommodate market adjustment. Commenter states that by specifying a 9% starting requirement for Class 2b/3 pickups in 2027 MY, the ACT regulation does not address the need for gradual transition in the segment. Commenter recommends that when electrified pickups are introduced, the initial ramp rates follow the phase-in pattern of the other Class 2b/3 and Class 8 vehicles. [B1-11]

Agency Response: No changes were made in response to this comment. As a result of the 30-Day Changes, the requirements for Class 2b-3 pickups has been modified to match those of all other Class 2b-3 vehicles. These requirements start at 5 percent in 2024 and ramp up to 30 percent in 2030. These requirements ramp up over time to give manufacturers time to develop and validate new products as well as give fleets time to test new products as well as make necessary infrastructure and workforce preparations. For staff's justification for removing the delayed timeline for pickup trucks, see section Comments Received During Original Proposal's 45-Day Comment Period, section Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements.

The regulation's structure gives manufacturers flexibility to bank credits, shift sales between weight classes, and trade credits with other manufacturers. This means that a manufacturer who sells pickups, vans, and trucks can meet their compliance obligation by producing ZE vans and trucks without producing any ZE pickups for a number of years if there are better markets to serve or can purchase credits from other manufacturers regardless of the truck types they sold to earn their credits.

Manufacturer ZEV Sales – Inclusion of Motor Coaches

Comment: Commenter asks why motor coaches are excluded from the ACT regulation. [T1-85]

Agency Response: No changes were made to the regulation in response to this comment. Staff excluded motor coaches because motor coach manufacturers have already begun zero-emission motor coach development in response to the Innovative Clean Transit (ICT) regulation and Zero-Emission Airport Shuttle Bus regulation. Their sales in California are low such that they would be exempt as small manufacturers, and giving credit for motor coaches and other transit bus categories would not provide additional benefit as these manufacturers are separate from typical bus manufacturers and already producing ZEVs. In addition, they would dilute the total number of ZEVs deployed in the ACT regulation because they are already required by the ICT regulation.

Manufacturer ZEV Sales – Health Impacts Not Fully Quantified

Comment: Commenter states that ACT SRIA didn't fully quantify the health impacts of air pollution. Commenter submitted studies supporting their comments. [OP-73]

Agency Response: No changes were made to the regulation in response to this comment. The health analysis for the ACT regulation was performed by calculating the emission reductions per air basin based off of the number of ZEVs anticipated to be deployed in each air basin. The regulation does not require manufacturer to deploy ZEVs in locations or areas which limits the ability to estimate the emission impacts in greater detail. CARB recognizes this limitation and will reassess emissions

methodology in future rulemakings and as newer research allows more thorough methodologies.

Manufacturer ZEV Sales – General Support

Comment: Commenter states they strongly support the proposed regulation. [OP-17, OP-22, T1-31]

Comment: Commenter generally supports, urging the Board to be bold to get diesel trucks off the road. [OP-35]

Comment: Commenter states support in CARB leading California to a future free of the influence of the oil industry. [OP-38]

Comment: Commenter states support for CARB to adopt the regulation and requests CARB work with trucking industry cooperatively to achieve new targets which may be difficult to attain. [OP-95]

Comment: Commenter supports the proposed regulation and reference senate bill 498 (SB 498) and SB 44 showing the Legislature's support in maximizing the adoption of ZEVs in California. [OP-100]

Comment: Commenter states they are supportive of the overall goal of the proposed regulation and are ready to help facilitate transformation of the transportation sector across all medium- and heavy-duty segments. [OP-104]

Comment: Commenter states support for the proposed ACT regulation to address climate change, air pollution, and the impacts to disadvantaged communities. [B1-09]

Comment: Commenter states that ZEVs are good and trucks have the ability to become ZEVs. [T1-35]

Comment: Commenter states they support the ACT regulation and immediate transition to cleanest available technologies. [T1-67, T1-68]

Agency Response: Staff thanks the commenters for these supporting comments. Additional issues raised by commenters, if any, are addressed in the applicable sections.

Manufacturer ZEV Sales – Support for Following Through on SIP Measure

Comment: Commenter states CARB should adopt this rulemaking to follow through on the inclusion of and commitment to the "Last Mile Delivery Standard" in the State Implementation Plan and Scoping Plan. [OP-15]

Agency Response: Staff thanks the commenter for the supporting comment.

Large Entity Reporting – General Support

Comment: Commenter commends CARB staff for making changes to original language and supports the current reporting requirements. [OP-63]

Agency Response: Staff appreciates stakeholder support for collecting this critical information. Any other comments or issues made by the same commenters are addressed in the applicable sections.

Large Entity Reporting – Unclear Language, Unclear Requirements, Unnecessary Information

Comment: Commenter states the regulation language is unclear, asking for judgements, guesses and approximations resulting in unusable data. Additionally, commenter states the goals of the reporting requirement are unclear. Commenters state CARB is asking for information about unrelated vehicles or not asking for more pertinent information regarding existing electric or low-emission vehicles. [OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-44, OP-51, OP-52, OP-54, OP-108, T1-26].

Comment: Commenter states that data provided would likely be inaccurate estimates because vendors, not the commenter, would have most of the data being requested. [OP-54]

Comment: Commenter states there are ambiguities in the section language that will lead to misleading or erroneous conclusions that could skew and/or double-count large entity reporting information. [OP-81]

Comment: Commenter states CARB's purpose for collecting facility level and contracting data needs to be clarified in rulemaking documents to refine the best data and collection methods to meet the intended purpose. Additionally, commenter states CARB should directly address whether indirect sources will be a point of future regulation. Commenter states that it is not clear why information on light duty vehicles is needed, or that light duty vehicle information is superfluous. [OP-106]

Comment: Commenter states that light duty vehicles were not evaluated by CARB in the economic analysis, are inconsistent with the medium- and heavy-duty focus of the regulation otherwise, and should be deleted. [OP-108]

Comment: Commenter states the regulation does not provide enough specificity in describing the type and measure of data requested, stating that many of the facility types could be interpreted broadly to apply to the commenter's facilities, but may overlap in interpretation, so the commenter would not know which facility type to group the facilities under. Additionally, commenter has concerns about how to interpret "predictable usage pattern" for the vehicle portion. [OP-110]

Comment: Commenter agrees with the comments submitted by the California Chamber of Commerce expressing concern on excessive reporting, vague enforcement, and unclear goals. [B1-08]

Comment: Commenter states the regulation language is unclear, asking for judgements, guesses and approximations resulting in unusable data. Additionally, commenter states the goals of the reporting requirement are unclear. Commenters state CARB is asking for information about unrelated vehicles or not asking for more pertinent information regarding existing electric or low-emission vehicles. [T1-70, T1-99]

Comment: Commenter states that it is important for staff to clarify and narrow the reporting requirements. [T1-42]

Comment: Commenter states that it is not clear why information on light duty vehicles is needed, or that light duty vehicle information is superfluous. [T1-99]

Agency Response: Staff made changes to the regulation to streamline the reporting process and clarify any confusing language in response to these comments. As part of these changes, staff removed the facility reporting information, truck trip count information, all light-duty vehicle information, as well as streamlined the language and added guidance on how to complete the reporting. This is consistent with the comments received as well as Board direction to streamline the reporting. Staff deliberately designed the reporting to use best estimates in order to allow respondents flexibility and leeway in responding. Staff has worked with stakeholders to streamline, simplify, and clarify expected responses to these questions. The information in the approved regulation is primarily limited to vehicle usage information and about the vehicle home base which will help staff develop effective and fair ZE fleet rules.

Large Entity Reporting – Cost Burden

Comment: Commenter states that staff underestimated the cost of the reporting requirement. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-44, OP-51, OP-52, OP-54, OP-63]

Comment: Commenter states that mandatory reporting and purchasing requirement benefits are outweighed by the cost of regulation. Current investments by commenter's members undermine the need for mandates and ambitious timelines, and would only increase the cost of equipment. The majority of entities do not have tracking in place for the data requested, and would be required to develop and implement such systems, resulting in more cost and time burden than CARB estimated. CARB's compliance cost estimate for the reporting requirements are significantly underestimated. [OP-39, OP-108]

Comment: Commenter states entities would need to develop and implement tracking systems and record retention policies that do not exist, which are complex and expensive. [OP-54]

Comment: Commenter states that economic analysis of the reporting requirement proposal concerns them. [OP-65]

Comment: Commenter states that most waste industry providers are rate-regulated and are not free to unilaterally pass on to their customers the cost associated with a change in law or regulation. [OP-81]

Comment: Commenter states that SRIA estimates for reporting cost is unclear and underlying assumption that companies would already have data management systems to gather information is incorrect, as commenter does not have data at the level requested. Additionally, extensive facility coordination labor costs and time requirements are underestimated by CARB, as individual data points must be gathered to provide correct ranges. [OP-103]

Comment: Commenter states that SRIA severely underestimates time and cost of reporting and CARB should update economic assessment and/or refine the rule requirements to minimize the burden. [OP-106]

Comment: Commenter has concerns on the unforeseen impact to district budgets and operations, as well as the potential for needed inventory to become limited due to potential reduction in manufacturing offerings as a result of the requirements as currently proposed. Commenter is concerned potential impacts of the ACT to district budgets could directly lead to a reduction in critical services provided by districts to their community. [B1-01]

Comment: Commenter is concerned the large entity reporting requirements will impose new costly and burdensome reporting requirements and should be addressed prior to adoption. [B1-09]

Comment: Commenter states the cost and time requirement of complying is not in line with what staff estimates. [T1-03]

Comment: Commenter states that 4 hours in the SRIA underestimates the time and thus cost burden of reporting. [T1-06]

Comment: Commenter states concern over the cost that future mandates will have to farmers, such as prices of pick-up trucks increasing. [T1-47]

Agency Response: Changes were made to the regulation in response to these comments. Staff removed all questions related to facility contracting, truck trips, and light-duty vehicles. These changes should decrease the time and expense associated

with the reporting requirements. In the Staff Report, staff updated the time estimate for the large entity reporting from 4 hours as described in the SRIA to 25 hours. This is an estimate as the time needed to report will vary widely as businesses with few trucks will be able to complete their reporting quickly while large fleets will need more time. The anticipated costs of the reporting requirement are anticipated to be minimal and not result in rate increases to pass on to customers. Staff has added guidance to the regulation that will help fleets who do not have robust data management software complete the reporting requirement.

Large Entity Reporting – Regulation Requires Hard-to-Collect Information

Comment: Commenter states their members do not dictate contracted transport means and have no control over how services are provided, nor information on vehicles used to provide the services, and could likely not identify types of commodities being shipped. Paper correspondence are sent via carriers or postal system and may at some point be on 3rd party trucks over 8,500 GVWR, but validating that or the volume would be impossible. [OP-54]

Comment: Commenter states that questions asked in the large entity reporting requirement are too extensive and states that company revenues should have no place in future regulations. This creates an undue burden on fleets that do not already collect or maintain these types of records. [OP-58]

Comment: Commenter points out the record retention portion of the proposed large entity reporting requirement implies that records must be collected for every facility to support the aggregated and representative responses, which would negate any time or resource savings resulting from aggregate responses. They have hundreds of facilities which could possibly be respondent to the vehicle usage data section, and requests CARB to use vehicle usage data from a representative facility of each type. [OP-102]

Comment: Commenter states concern that vehicle usage section would require commenter to report information for each of its facilities that has a single truck stationed at the facility, and that this results in 7000 vehicles being tracked daily to collect responsive data. The reporting requirements will require unnecessarily extensive data collection and is burdensome. [OP-103]

Comment: Commenter states CARB underestimates administrative burden, costs, and compliance challenges to fleet and facility reporting. The rule implies entities would need to gather data on every facility and vehicle over the 2020, requiring collection of data prior to finalizing the rule, and the recordkeeping requirements would necessitate specificity that staff are trying to avoid with streamlining efforts. [OP-106]

Comment: Commenter states that due to lack of control businesses have over dictating transportation methods or means for services contracted, data requested may be unknown resulting in a lack of usable data. Regulated entities have no control over

records of subcontractors or subhaulers that contractors hire to perform services, and will not be able to keep these records. [OP-108]

Comment: Commenter states the Board should recognize various ancillary challenges associated with the ACT fleet reporting proposal and should make efforts to overcome or minimize them. [OP-116]

Comment: Commenter states the information being asked for is intrusive. Some of their small family owned business members do not keep the data CARB will be requesting. [T1-03]

Comment: Commenter states they are being asked to report data about vehicles they do not control. [T1-06]

Comment: Commenter states that the fleet reporting puts an undue burden on entities, many of which have never been regulated by CARB prior to this rule and are not direct sources of GHG emissions. [T1-22]

Comment: Commenter states CARB underestimated the time and cost burden to comply, as members do not have systems in place to track the information CARB is seeking since they are not in the trucking business. [T1-26]

Comment: Commenter mentions the fleet reporting requirement offers challenges. [T1-46]

Comment: Commenter states that staff underestimates reporting time requirement, and states that members need at least 6 months together required data. [T1-77]

Comment: Commenter states that the fleet reporting should be streamlined to be less onerous. [T1-99]

Agency Response: Staff recognizes the potential unintended burden that the initially proposed regulation may impose on businesses, as a result, changes were made to the regulation in response to these comments. Consistent with Board direction to streamline the reporting, staff has made several key changes to the proposal. First, regulated entities were limited to only those that own or direct the operation of medium- or heavy-duty vehicles. Second, all of the facility-based data and truck trip counting questions were removed. Staff will seek to gather this data through other means such as a contract. Third, after the initial hearing, staff worked with stakeholders to further simplify report, and added additional language in the regulation to clarify expected responses and to provide more flexibility in determine which time period to use in analyzing vehicle usage data. Last, language was added to make it clear that CARB staff would seek clarification of apparent anomalies in the reported data. These changes are consistent with commenters' requests and meet the Board's direction.

Large Entity Reporting – Bifurcate the Large Entity Reporting from the ACT Regulation

Comment: Commenter requests CARB bifurcate the large entity reporting requirement from the manufacturer sales requirement into a separate rulemaking and hold additional public workshops to solicit affected businesses. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-44, OP-51, OP-54, OP-58, OP-102]

Comment: Commenter states that staff should bifurcate this rule and hold a series of workshops to create a workable streamlined data gathering process. At minimum, the current draft has many issues that must be addressed. To that end, appreciates staff's commitment and recommendations to narrow the dates upon which businesses will be required to count vehicles, clarify how businesses will choose representative weeks and facilities, and to work to revise unclear definitions. [OP-39, OP-108, T1-22]

Comment: Commenter requests CARB bifurcate the large entity reporting requirement from the manufacturer sales requirement into its own rulemaking. [T1-03, T1-23, T1-27]

Comment: Commenter asks to delay implementation of the regulation to allow time for a more thoughtful rule to be developed. [T1-99]

Agency Response: No changes were made to the regulation in response to these comments. The Board directed staff to accelerate the rulemaking process for fleet rules when they approved the Resolution. It would not be possible to have enough time to finish the manufacturer rule, craft a separate reporting regulation, have time for fleets to collect and submit data, and then use that data to craft a future ZEV fleet rule by the end of 2021. Staff held multiple workshops and workgroup meetings through a four-year public process with eight public workshops, five public workgroups, two focus group meetings, and well over one hundred meetings with stakeholders, thus providing significant opportunity through the process to obtain and respond to their concerns.

Large Entity Reporting – Specific Changes to the Facility Reporting

Comment: Commenter states the requirement for vendor or subcontractor vehicle trips should be removed, as quantifying "non-refrigerated" vs "refrigerated" trips requires visual inspection, and would be burdensome and infeasible, and the data is duplicative because those vendors would likely be subject to the reporting requirements already. [OP-61]

Comment: Commenter states CARB should recognize businesses don't have vehicle trips based on "typical week" and should work with entities to determine appropriate assumptions to avoid noncompliance. [OP-63]

Comment: Commenter recommends CARB include definitions for "goods", "non-food delivery", and "food delivery" to the representative facility survey, to help provide clarity

on what is include and where to report it. Commenter questions how the term "trip" is defined in the vehicle trips section. Does trip refer to an arrival or departure of one vehicle trip or two separate vehicle trips? For example, is arriving on Monday and departing on Tuesday one trip or two trips? Commenter has questions about applicability of vehicle trips and supplier counts and wants to know if these terms include company and or non-company third-party vehicle trips and suppliers. [OP-104]

Comment: Commenter states CARB should clarify rule language if facility reporting for a "typical week" snapshot in time is intended, and provide guidance on how to determine the appropriate tracking period and documentation. [OP-106]

Comment: Commenter states that 2012.3(b)(4) should be deleted, as entities will not have data for vehicles acquired prior to 2020 reporting year. The regulation should be revised to clarify that entities should only report facilities and vehicles operated inside California. [OP-108]

Comment: Commenter states that "typical facility" and "typical week" need to be clarified with guidance. [OP-110]

Agency Response: Staff has removed the entire facility reporting section of the rule in response to these and other comments from stakeholders, and will seek to gather the information through non-regulatory means. For further information on other streamlining modifications, see response in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Unclear Language, Unclear Requirements, Unnecessary Information".

Large Entity Reporting – Increase Amount of Information Reported

Comment: Commenter states the reporting requirements should ask whether current vehicle is used to help society recover after a catastrophe, whether their current vehicle is used in daily emergencies, the amount of daily average and annual miles per category of vehicle and monthly hours of operation per category of vehicle, the percentage of short trips vs long trips by category of vehicle, how many vehicles in single, double, or triple shift operations, and an estimate of the percentage of daily or annual miles driven within disadvantaged communities. [OP-50]

Comment: Commenter states CARB should require total number of hauls made by the company and the number of hauls made by direct employees to understand the extent to which a business relies on contracting. [OP-76]

Comment: Commenter states that vehicle data requested does not provide useful information, including missing the distribution of miles travelled in a year. [OP-110]

Comment: Commenter states the reporting requirements need to be strengthened and capture key data on industry adoption barriers. [T1-87, T1-91, T1-94, T1-96, T1-97]

Comment: Commenter states CARB should collect data on total hauls and hauls performed by direct employees versus contractors. [T1-88]

Comment: Commenter suggests including the weight class category for vehicles in questions 2012.1(a)(17) and (a)(18). [OP-104]

Agency Response: No changes were made to the regulation in response to these comments. The approved ACT Regulation balances the need to collect as much information as possible with Board direction to streamline the reporting and reduce burden on affected entities. Staff have determined the required information to be sufficient to broadly characterize industry sectors and to identify business models that may be able to electrify their fleets sooner, which will factor into future fleet regulations. Staff intends to allow fleets to submit voluntary information as part of their reporting. Additionally, staff intends to request and accept additional information from fleets as part of a future zero-emission fleet rule.

Large Entity Reporting – Require Annual Reporting

Comment: Commenter states CARB should require reporting on an annual basis to capture continuous updates as trucking industry grows and transforms. [OP-76]

Comment: Commenter states CARB should require annual reporting to help develop a comprehensive picture of the changing industry. [T1-88]

Agency Response: No changes were made to the regulation in response to these comments. The information required by the large entity reporting is sufficient to support further development of ZE fleet rules and gathering information annually afterwards would be unnecessary as staff would not have time to incorporate information received in April 2022 into the ZE fleet rule that staff intends to present to the Board in late 2021. Furthermore, increasing the reporting requirements will be inconsistent with Board direction to streamline the reporting. If additional reporting is necessary, staff can reintroduce requirements at a separate date in the future. Staff intends to allow fleets to submit voluntary information as part of their reporting. Additionally, staff intends to request and accept additional information from fleets as part of a future zero-emission fleet rule.

Large Entity Reporting – Lower Size Threshold

Comment: Commenter states that reporting requirement threshold should be lowered to 15 vehicles dispatched in 2019 for drayage, parcel, construction, and long-haul entities to collect data on the smaller firms that are the primary operators in these industries. Commenter states that reporting requirements should be strengthened, as data captured would be too limited to inform future policies. Commenter provides an example that reporting requirements written would only capture data on 26 trucking firms representing less than 2% of active trucks at the San Pedro Bay ports, which

would be insufficient to adequately characterize port operations. Commenter provided supporting documentation, articles, and references to support their comment. [OP-76]

Agency Response: In response to this comment, staff has lowered the threshold for respondent fleets from 100 to 50 vehicles. Based on available information, staff believes that lowering the threshold to 50 would result in significantly more fleet reporting information on their vehicles. This is necessary since as a result of the strengthened manufacturer ZEV sales requirements; more fleets will need to electrify. Gathering information on these smaller fleets will give a more complete picture of the overall truck marketplace. This more granular data provides increased resolution on drayage and delivery operations that tend to attract smaller fleets than other applications. For these reasons, decreasing the fleet size threshold meets the regulation's objectives. Additionally, staff intends to request and accept additional information from fleets as part of a future zero-emission fleet rule.

Large Entity Reporting – Timing of Data Collection

Comment: Commenter states that recordkeeping is required for the year 2020, but will not be in effect until mid-2020, creating an undue burden on fleets that do not already collect or maintain these types of records. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-51, OP-52]

Comment: Commenter states the reporting requirements of reporting and recordkeeping timing will result in a retroactive rule, which does not allow due process, so should be revised to allow facilities at least 1 year after the rule is final to prepare for implementation. The data gathering period and timeline presents challenges, including limited implementation time. Commenter also states that to take end of year odometer readings, beginning of year readings must be taken as well, which would be prior to the rule finalization period. The rule's timeline and feasibility studies are based on situations that may not work in the real world and are aggressive considering the current state of technology. [OP-39, OP-108]

Comment: Commenter states CARB has underestimated the time needed to complete reporting. [OP-110]

Comment: Commenter states the reporting requirement does not provide enough notice for entities to develop and implement tracking systems to collect requested data. [OP-61]

Comment: Commenters states the reporting time frame needs to have further expression for collection and the representative period of data collection. [OP-81]

Comment: Commenter states that recordkeeping is required for the year 2020, but will not be in effect until mid-2020, creating uncertainty on whether the regulation will be final and the amount of time entities will have to gather the data. Commenter states the

time needed to gather the information is also underestimated and could take weeks, and is not already collected or easily accessed. [OP-102]

Comment: Commenter states the timing of finalizing the regulation will not leave enough time for entities to comply with the reporting requirements, as CARB requires information from data year 2020 but the entities would not be able to begin data collection until the rule is finalized, as the requirements may change. Some commenters request reporting later or data collection timelines, such as using data collected in 2021 with a reporting deadline of April 1, 2022. [OP-103, OP-116]

Comment: Commenter states the regulation does not provide sufficient time to collect data by requiring reporting in April 2021 for the 2020 calendar year. Commenter requests a July 1, 2021 deadline to avoid conflicts with other federal and state GHG emissions reporting which would unduly burden the staff whose responsibility it is to comply with reporting mandates. [OP-110]

Comment: Commenter request during busy seasons they can use a "time period" to report answers about typical daily operations. [OP-116]

Comment: Commenter states they support comments by CTA recognizing the need to further extend the reporting deadline and busy season reporting leads to overcapacity. [T1-27, T1-70]

Comment: Commenter states they need more time to review the proposed requirement to figure out how to comply. [T1-27]

Comment: Commenter states the timing of finalizing the regulation will not leave enough time for entities to comply with the reporting requirements, as CARB requires information from data year 2020 but the entities would not be able to begin data collection until the rule is finalized, as the requirements may change. Some commenters request reporting later reporting or data collection timelines, such as using data collected in 2021 with a reporting deadline of April 1, 2022. [T1-30, T1-70]

Agency Response: As a part of staff's modifications, more flexibility has been added to how fleets can collect data for the large entity reporting and what time period could be used in response to these comments. These changes were intended to make it easier for fleets to use information that is already available. The regulation describes various methods a regulated entity can use to complete their reporting. The regulation uses binned responses to provide guidance on the level of detail needed to complete the reporting. Additionally, changes were made to give flexibility allowing subsidiaries, joint ventures, and parent companies to report individually. Staff has added an option to allow regulated entities to report information about their fleet data as it consisted any time after January 1, 2019 to allow more flexibility in selecting an appropriate snapshot of their fleet operations using existing records. Beyond this, most of the information

required is already expected to be kept by fleets to minimize additional information that would need to be collected. To the extent that it is simpler for fleets to collect new information, changes to the regulation provide additional guidance on how to collect representative information when needed. This representative information can be collected in any time period the fleet owner chooses before the information must be reported. These modifications allow fleets to comply with the reporting requirement regardless of whether they currently collect this information or not. These modifications also ensure that fleets are not required to provide non-existent information to complete their reporting as all information is either already available or can be quickly collected.

Large Entity Reporting – Enforcement Concerns

Comment: Commenter states that potential enforcement penalties are too high for a data gathering exercise, and does not understand how the rule will be enforced or whether reported information will meet an acceptable standard. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-44, OP-51, OP-52, OP-54, OP-108]

Comment: Commenter states CARB cannot impose requirements on entities before a rule is finalized. Commenter states that businesses will not know whether their answers are "enough", with lack of guidance on how CARB will evaluate subjective terms such as "good faith effort" or "best judgement". [OP-39, OP-108]

Comment: Commenter states concern that rule does not provide information about how compliance will be measured or enforced, preventing effective data collection protocols from being developed. [OP-61]

Comment: Commenter states that enforcement procedure for the large entity reporting is unclear and needs to be clarified. [OP-98]

Comment: Commenter supports need for additional streamlining and clarity surrounding enforcement made by California Chamber of Commerce. [OP-116]

Comment: Commenter states that violation penalties of \$37,500 is very significant to their members and should result in additional workshops. [T1-23]

Comment: Commenter states that we should ensure enforcement burden is not too great to avoid excess paperwork. [T1-77]

Comment: Commenter is concerned that failing to comply could result in huge fines as the result of a "best estimate". CARB intended to include language that would soften the enforcement of the regulation for those acting in good faith but were off in estimates, but does not see any such language in the regulation draft. [T1-99]

Agency Response: Staff added language stating that regulated entities have 14 days to respond to a request for clarification. This helps ensure that if staff has questions about reported data, there is a pathway for remediation without enforcement action. CARB's Enforcement Division has discretion when determining penalties for non-compliance, and must take into consideration statutory mitigation areas including magnitude of non-compliance, whether emissions were increased as a result of the violation, etc. Staff's intent is to collect useful data with the reporting requirement and will work with regulated entities if questions arise.

Large Entity Reporting – Confidentiality, Proprietary Info, Security, and Public Record Act Requests

Comment: Commenter states that online reporting that asks for specific company identification numbers is a concern about security preservation in light of recent data breaches. [OP-58]

Comment: Commenter states CARB should clarify whether it intends to publish, report on, or otherwise disclose fleet reporting data. [OP-116]

Comment: Commenter raises questions about the regulation's confidentiality provisions and responses to Public Record Act requests. [OP-116, OP-44]

Comment: Commenter states that some businesses will not comply with the reporting requirement because they view the data being requested as proprietary to the business. Commenter states that data collected by CARB could be transferred to other agencies that will sell the data. [T1-03]

Comment: Commenter states concern over the reporting requirements releasing personal home addresses of farm workers. [T1-47]

Comment: Commenter states they support the comments by CTA recognizing the need to further extend handling of confidential reporting data. [T1-70]

Comment: Commenter states they have concerns about potential release of confidential data. [T1-77]

Agency Response: No changes were made to the regulation in response to these comments. CARB follows standard procedures to secure confidential and personally identifiable information. Sensitive data collected in other regulations has maintained the necessary level of data security. CARB staff intend to publicly release aggregated data to meet stakeholder requests for data. Staff will maintain confidential information pursuant to California Code of Regulations title 17, sections 91000 to 91022 and the California Public Records Act.

Large Entity Reporting – Use TRUCRS System for Reporting

Comment: Commenter states CARB collect real-world data from fleets, possibly through telematics, and could potentially tie voluntary fleet submission of such data to the future fleet rule. Commenter believes real-world data is more important than the survey data. [OP-50]

Comment: Commenter states that CNG/LNG fleets already in Truck Regulation, Upload, and Compliance Reporting System (TRUCRS) should be restored. Additionally, commenter states CARB should seek outside software development firms to receive reporting information that is user friendly and meets data privacy concerns. [OP-69]

Agency Response: No changes were made to the regulation in response to these comments. Staff intends to allow respondents to download fleet information out of TRUCRS to minimize duplicate reporting; however, only a subset of vehicles report into the TRUCRS database and only a portion of those vehicles are required to report vehicle usage information. Therefore, staff will be developing a new system for collecting the information. Staff believes that developing the data collection and analysis methods internally is sufficient, and will not seek outside contractors for this specific purpose.

Large Entity Reporting – Gather Information on Existing Infrastructure Costs and Low-Emission Vehicles

Comment: Commenter states that companies responding to the large entity reporting requirement should be able to voluntarily submit the value or cost of CNG, LNG, or EV infrastructure already installed at facilities. Commenter also states CARB should allow voluntary submission of fuel consumption data. [OP-69]

Comment: Commenter states that the rule fails to request data on use of low-emission vehicles, the adoption of which has historically been incentivized by the legislature and by CARB. Failing to account for the environmental benefits these vehicles achieve, and failing to provide credit to those who followed directions and upgraded their vehicles early wastes millions of taxpayer dollars, as well as the millions invested by companies who were doing their best to upgrade their vehicles and lower emissions. For example, § 2012.3 asks for information on refueling infrastructure for fleets, but not for other facilities subject to the rule. CARB should amend the rule to take care not to disturb the investments these companies have already made in non-battery electric vehicles, such as a hydrogen, biodiesel, and low NOx vehicles, all of which are contributing to the downward trajectory in transportation emissions. [OP-108]

Comment: Commenter states that reporting fails to ask about existing fueling infrastructure, use of low or near-zero vehicles, or other carbon reduction measures implemented. The reporting requirements should ask for data on low-emission vehicles to recognize existing investments. [OP-108]

Comment: Commenter states CARB should collect data on existing and near-term investments in infrastructure and cleaner vehicles/fuels, including near-zero and other advanced technologies, to help characterize fleet and facility investment plans and to inform future rules. [OP-106]

Comment: Commenter states that reporting should also consider the availability of infrastructure and that it should take into account how previously incentivized adoption of alternative fuel vehicles have been implemented. [T1-22]

Agency Response: No changes were made to the regulation in response to these comments. Staff directionally agrees that capturing the cost of existing infrastructure investments can provide valuable context, but also must comply with Board direction to streamline reporting. To accomplish this, the reporting requirement requires fleets to identify what infrastructure has been installed within the last ten years without providing additional information. This allows staff to identify which fleets have made those investments and who to contact to obtain additional information. Similarly, the fuel type of the fleet's vehicles must be reported and will allow staff to contact fleets who have invested in low-emission vehicles.

Staff intends to allow fleets to submit voluntary information as part of their reporting. Additionally, staff intends to request and accept additional information from fleets as part of a future zero-emission fleet rule.

Large Entity Reporting – Allow Entities to Provide Comments with Reporting

Comment: Commenter suggests adding a "comments" response column so entities can provide clarifications on data anomalies to better characterize their particular use case. [OP-61]

Agency Response: No changes were made to the regulation in response to this comment. Staff intends to allow fleets to submit voluntary information as part of their reporting.

Large Entity Reporting – Insufficient Outreach

Comment: Commenter states the large entity reporting requirement has been fast tracked, and CARB had only released the first concepts of the reporting requirement at the final public workshop which did not allow adequate time to address concerns from affected entities. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-39, OP-37, OP-51, OP-52, OP-54, OP-58]

Comment: Commenter states the large entity reporting requirement has had limited public outreach, insufficient workshops, and lack of engagement from regulated businesses. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-51, OP-52, OP-54, T1-26]

Comment: Commenter states CARB had only released the first concepts of the reporting requirement just 3 months before the board hearing. [OP-39]

Comment: Commenter states the large entity reporting requirement has had limited public outreach, insufficient workshops, and lack of engagement from impacted businesses, especially in the light of recent public safety power shutoffs and how those might interact with mandated electric vehicles. [OP-58]

Comment: Commenter states regulated entities were not notified of this rulemaking, and those that were notified were primarily targeted at fleet owners through existing listserves focused on the manufacturer sales requirement. Commenter states that more needs to be done to outreach to businesses to engage on this effort and other CARB efforts. Rulemaking was accelerated, stating concepts for reporting requirements were only released August 21, 2019, and states staff has not responded to public comment from August workshop nor made effort to explore alternatives proposed by stakeholders. Commenter states staff should adjust the data gathering period or the reporting deadline so it is practical for entities to comply. [OP-106, T1-30]

Comment: Commenter states that CARB did not solicit input or feedback from the businesses affected by the ACT regulation reporting requirement. Commenter states that a common criticism of regulatory agencies is that few, if any, understand how business is done and the challenges faced in compliance to such ill-prepared regulations. Commenter urges CARB to reach out and ask for input and suggestions prior to simply developing regulations in an agency vacuum. [B1-08]

Comment: Commenter states there has not been enough outreach to affected entities, and there are thousands that do not know they will be required to report. [T1-03]

Comment: Comment state CARB should interact more with affected stakeholders for the reporting requirement as they will be the end users of ZEVs. [T1-24]

Agency Response: No changes were made to the regulation in response to these comments. CARB's public planning and review process has been robust from the beginning of the ACT regulation development. Since 2016, CARB staff has held eight workshops, five workgroup meetings, and numerous individual meetings with stakeholders to provide information to the public and to solicit feedback. Staff has held several public workshops to propose and refine the large entity reporting concept. CARB staff posted information regarding these events and any associated materials on the ACT website and distributed notice of these meetings through two public list serves; "actruck" and "zevfleet" that include 3,092 and 1,356 recipients, respectively. The majority of the meetings were available by in-person attendance, webcast, and teleconference. Staff proposed this concept first in December 2018, and continued to refine the concept through public workgroups and workshops afterwards. Additionally, staff sent a mail out in mid-2018 to approximately 11,000 entities with corporate

revenues at or over \$50 million notifying them that staff was considering this concept. The Initial Statement of Reasons (ISOR), which was released to the public on October 22, 2019, identifies the data, reports, and information relied upon for the proposed regulation. The Draft and Final Environmental Analysis (EA) provided an analysis of the potential environmental impacts associated with the ACT Regulation, including the large entity reporting requirements. The Board held a public hearing on December 12, 2019 to consider the proposed ACT Regulation and Draft EA. Then, in February 2020, CARB hosted a workshop to discuss modifications to the ACT Regulation. The Board held another public hearing on June 25, 2020, during which CARB adopted Resolution 20-19 and approved the ACT Regulation. For these reasons, staff believes that the potentially regulated public were sufficiently noticed well in advance of the initially proposed regulation being released and well in advance of the Board's adoption of the proposed regulation.

Large Entity Reporting – Data Can Be Gathered Through Other Sources

Comment: Commenter states CARB can gather the required data through other means. [OP-03, OP-04, OP-05, OP-06, OP-09, OP-10, OP-12, OP-14, OP-32, OP-37, OP-39, OP-51, OP-52, OP-54]

Comment: Commenter recommends data collection be done through a non-regulatory "request for information" process. [OP-61]

Comment: Commenter states that vendor data is best provided by vendor owners. [OP-110]

Comment: Commenter states that some information being requested is already being gathered in other areas, and would like to combine these to avoid duplicative effort. [T1-06]

Agency Response: No changes were made to the regulation in response to these comments. Throughout the rulemaking process, staff has gathered data and information from a variety of sources such as industry reports, Department of Motor Vehicles information, and other publicly available sources. The information that currently exists is insufficient to properly assess the ZEV potential of medium- and heavy-duty as most data sources do not have information about key characteristics for truck electrification, e.g. typical daily mileage, ability to install infrastructure, whether vehicles return to a central base, and so on.

Staff attempted to collect vehicle usage data through a voluntary survey that was sent out early 2018. The response rate was roughly 1 percent and the information received was not representative of the trucking industry or any individual sector. Fleets and organizations who were actively engaged in the ACT rulemaking process did not participate in this voluntary survey. Based on these events, staff determined the best

way to gather sufficient data from across the breadth of the trucking sector is through a mandatory reporting requirement.

Large Entity Reporting – Standardized Template

Comment: Commenter requests a standardized response template for the reporting requirement be provided for entities. [OP-61]

Agency Response: Staff intends to use a standardized spreadsheet for regulated entities to complete their responses.

Large Entity Reporting – Only Report Own Vehicles

Comment: Commenter states that reporting requirements should be limited to their own fleet operations under their direct control as opposed to third party vendor fleets. [OP-61]

Agency Response: Changes were made to the regulation in response to this comment. Staff modified the regulation to require vehicle operational characteristics only be reported for vehicles the entity has under their control. Entities will still have to report general information on the number of subcontractors, subhaulers and subhauler vehicles, but will not be required to report operational characteristics of those vehicles.

Large Entity Reporting – Focus on Delivery Vehicles

Comment: Commenter states that only seeking information from light and medium-duty pickup and delivery fleets would be a simpler approach. [OP-58]

Agency Response: No changes were made to the regulation in response to this comment. Because the scope of future ZE fleet rules is anticipated to include more vehicles than just delivery vehicles, it would be inconsistent to only include light- and medium-duty delivery vehicles.

Large Entity Reporting – Allow Fleets to Use a Representative Facility

Comment: Commenter states that each regulated entity should only be required to provide a general inventory of total number of facilities and the number of vehicles stationed at each facility for each group/class of facility, and to have a detailed report of data CARB is requesting submitted for only one representative facility in each group of facilities including vehicle usage information. [OP-102, OP-103]

Agency Response: Staff has clarified the regulation text in response to this comment. The proposal in the Staff Report allowed entities to use the operational data collected from one facility for vehicles at other facilities if the entity determines they have similar operational characteristics. Staff has clarified the language to ensure entities are aware

they have this option. This meets the commenter's request and is consistent with Board direction to streamline the reporting.

Large Entity Reporting – Require Future ZEV and Infrastructure Plans

Comment: Commenter suggest CARB should consider adding a question that ask for future acquisition plans for electric vehicles procurements by type, duty cycle, and number of acquisitions by year (over a ten-year period). In addition, CARB should also request the same information for potential future charging infrastructure. [OP-104]

Agency Response: No changes were made to the regulation in response to this comment. Staff is not proposing to collect this information as it would be of minimal value and be inconsistent with Board Direction. At this point, relatively few fleets have concrete plans in place for incorporating ZEVs as most ZEVs are still in the demonstration phase. Likewise, most fleets do not consider infrastructure until they have committed to adding ZEVs to their fleet. Adding this question to a reporting requirement due in April 2021 would have little value as the majority of fleets would not be able to answer anything of value. In addition, including more questions would not be consistent with Board direction to streamline reporting.

Large Entity Reporting – Exempt Emergency Vehicles

Comment: Commenter asks for an exemption from the reporting requirement for emergency vehicles designed to respond during power outages. [OP-108]

Agency Response: No changes were made to the regulation in response to these comments. Emergency vehicles as defined in the California Vehicle Code 165 are exempt from the Large Entity Reporting requirements. The reporting requirements do apply to non-emergency vehicles that are used for emergency response. Understanding these vehicles will be critical in ensuring that future fleet rules do not impede these vehicles from their critical operations.

Large Entity Reporting – Exempt Rental, Leasing, Construction, and Construction Repair Companies

Comment: Commenter states rental and leasing companies and construction and equipment repair vehicles should be exempt from the large entity reporting requirements. [OP-58]

Agency Response: No changes were made to the regulation in response to this comment. The purpose of the Large Entity Reporting is to gather information that can be used to develop future fleet rules. It is premature to exempt any fleet category from the reporting requirement as determining which vehicles may need additional time or cannot be electrified is as critical as determining which vehicles can be easily electrified. The fleets mentioned in the comment letters sum up to be a significant portion of the California fleet, and major rental and leasing companies are already making significant

investments in ZEVs. Staff will evaluate the potential for electrifying these vehicles in the ZE fleet rule but removing the reporting requirements will hobble staff's future efforts.

Large Entity Reporting – Exempt Class 8 Vehicles Registered under the International Registration Plan

Comment: Commenter states the large reporting requirements need to be streamlined and should exclude interstate trucks and Class 8 trucks registered with the International Registration Plan (IRP). [OP-98, T1-70]

Comment: Commenter supports the American Trucking Associations' Request to Exclude Class 8 trucks registered with the International Registration Plan from Large Fleet Reporting. [OP-116]

Agency Response: No changes were made to the regulation in response to these comments. The purpose of the Large Entity Reporting is to gather information that can be used to develop future fleet rules. It is premature to exempt any fleet category from the reporting requirement as determining which vehicles may need additional time or cannot be electrified is as critical as determining which vehicles can be easily electrified. IRP vehicles represent a significant portion of vehicles miles travelled in California. In addition, many fleets register their entire fleets under IRP for a variety of reasons despite the vehicles not leaving their home base in California. The regulation only applies to those vehicles that travel through or are based in California, so the requirements are only applicable to vehicles that do business in California.

Large Entity Reporting – Exempt Companies Without Vehicles

Comment: Commenter states that their members do not haul or sub haul insurance products, but use national mail carriers or only receive paper and office supplies. Commenter also states that port and rail location usage is rare for their members, and though some companies may have heavier vehicles, a small percentage are used in California. Due to this, commenter requests CARB modify applicability to exclusively apply to haulers or carriers, or carve out exemptions or minimize data requirements for their members (non-hauler/carriers). [OP-54]

Agency Response: Changes were made to the regulation in response to this comment. Staff removed all requirements on businesses that do not own or broker vehicles. This is consistent with the commenter's request and Board direction to streamline reporting requirements. In addition, staff removed requirements to report about facilities, truck trips, or light-duty information. Staff retained requirements for large businesses with greater than \$50 million in annual revenue and at least one vehicle as staff foresees that the future ZE fleet rule may have requirements on large businesses regardless of how many vehicles that business owns.

Large Entity Reporting – Clarification on Off-Road Yard Tractors

Comment: Commenter request CARB clarify whether “yard goats” with off-road engines are included in the large entity reporting. [OP-116]

Agency Response: In response to this comment staff modified the requirements to explicitly include off-road yard tractors or yard goats. This meets the commenter’s request and is consistent with Board direction to clarify the requirement.

Large Entity Reporting – Modify Definition of “Fleet” and “Fleet Owner”

Comment: Commenter suggests removing the definitions of “federal fleet” and “rental or leased fleet” and the last sentence of the first paragraph, as the language suggests there are only two subclassifications of fleets - "federal" and "rental or leased". The California Uniform Commercial Code cited only defines "lease". Commenter suggests separately defining "rental and leased vehicles" as: Rental and Leased Vehicle means a vehicle under a contract or agreement for a term or period of one year or more that may include an option to renew the contract or agreement. Commenter suggests redefining “fleet owner” definition to exclude rental or leasing companies.(This comment incorporates a comment letter that was submitted in response to a draft of the Large Entity Reporting requirement prior to the release of the Staff Report) [OP-58]

Agency Response:

Some changes were made to the regulation in response to this comment. Staff removed the definitions of “federal fleet” and “rented or leased fleet”. However, staff has not defined “rented or leased vehicles” as these terms are generally understood and specific details on the usage of these terms are provided in the definitions of “common ownership and control” and “fleet owner” elsewhere in the regulation text.

Staff has not made modifications to the “fleet owner” definition in response to these comments. The regulation specifies that vehicles that are in a renting or leasing arrangement of one year or more must be reported by the renter or leasee, and arrangements of less than one year must be reported by the renting or leasing company. Removing requirements on renting and leasing companies will prevent necessary data collection on a significant portion of California’s fleet.

Large Entity Reporting – Modify “Subcontractor” and “Subhauler” Definitions”

Comment: Commenter states that current subhauler and subcontractor language in the large entity reporting section is confusing and should be reworded to capture all contracted businesses. [OP-76]

Comment: Commenter recommends changing references of “subcontractor” to “contractor.” and that reporting be limited to identifying the contractors who have a direct relationship with the reporting company and not associates. [OP-104]

Comment: Commenter states that subcontractor counts need to be removed or redefined. [OP-106]

Comment: Commenter states that "subcontractor" definition makes no sense, and revisions should be made. Commenter states that "work" under the subcontractor definition needs to be explained, and related to the vehicle usage. [OP-108]

Agency Response: In response to these comments, staff made changes to the usage of "subcontractor" and "subhauler" within the regulation. Staff removed the definition of "subcontractor" from the list of definitions because the term was only used once within the regulation and the description was incorporated into the body regulatory text. Staff then clarified and elaborated on its usage within the one location it is used in the regulation.

Staff modified the subhauler definition to state that it applies to brokers as well as motor carriers, and removed the phrase "to serve its customers" to make it clear that the definition does not apply to companies who serve customers on the regulated entity's behalf. These changes improve readability and meet the commenter's requests.

Large Entity Reporting – Clarification of Confusing Terms

Comment: Commenter requests the term "dispatched" is clarified, and suggests: "provided direction or instruction for routing a vehicle(s) to specified destinations for specific purposes of..." [OP-61]

Comment: Commenter states that facility categories, contracting practices, fleet mix, fueling infrastructure, and service delivery are internally inconsistent and do not match cross-agency policies and mandates. [OP-81]

Comment: Commenter states it is unclear if the potential groupings (vehicle body type, weight class bin, fuel type) are three possible options for respondents to choose one or if all three are required in the reporting in the description of grouping in 2012.3(b). [OP-104]

Comment: Commenter suggests clarifying whether "under your authority" refers to a reporting entity's motor carrier number in questions 2012.1(a)(14)(B) and (a)(14)(C). [OP-104]

Comment: Commenter suggests defining terms "electric vehicle supply" and "electric vehicle" for questions 2012.2(a)(1)(D) and (a)(1)(E) in the grouped facility information sections, and asks whether CARB is asking for all charging equipment to be responded for, including Level 1, portable, Level 2, etc. [OP-104]

Comment: Commenter states the information regarding the infrastructure in question (a)(6)(D) is vague and needs clarity. [OP-104]

Comment: Commenter suggest clarifying general entity information for question (a)(13) "contractors", as it is unclear if CARB is seeking information on activities by contractors that are directly serving a customer need or if a more expansive definition of contractor work is intended. [OP-104]

Comment: Commenter asks if question 2012.3(b)(2)(H), for reporting on the percentage of vehicles that "Returns to this facility daily", should be interpreted as "always returns" or "typically returns". [OP-104]

Comment: Commenter suggests changing Section (b)(2)(J) and (K) to "Stays within 50 miles of this facility on a typical day" and "Usually tows a trailer more than 100 miles a day". [OP-104]

Comment: Commenter asks if, in section 2012.3(b)(3), the average annual mileage for a typical vehicle by vehicle group is an average across the fleet for a particular vehicle type or an average for the vehicle group at the specific facility being reported on. [OP-104]

Comment: Commenter asks that "typical" and "representative" in relation to the facility information be clearly defined. [OP-106, OP-108]

Comment: Commenter states CARB must define "typically", otherwise will get widely varied and unusable data. [OP-108]

Comment: Commenter states that "broker" can be read to include anyone that orders delivery, and should be modified to reflect the intended target. [OP-108]

Comment: Commenter states that "responsible person" needs to be defined or deleted. [OP-108]

Comment: Commenter asks that "operated" in relation to the facility information be clearly defined. [OP-108]

Comment: Commenter asks that partnership and sole proprietorship definitions be updated to "A general partner or the proprietor, respectively, or their delegate or designee." [OP-108]

Comment: Commenter asks that "managed" be more clearly defined for the facility portion of "managed at the facility". [OP-108]

Comment: Commenter asks CARB define "written sustainability plan". [OP-108]

Agency Response: In response to these comments, staff has modified multiple portions or the regulation text to more clearly state what regulated entities are required to do and what specific terms mean.

The definition of “broker” has been narrowed to only entities with brokerage authority. This change clarifies staff’s original intent to only include those with brokerage authority.

The term “electric vehicle supply” has been clarified to refer only to Level 2 or higher powered chargers. This removes ambiguity around what chargers are and aren’t included. The other infrastructure information requested in section 2012.2(a)(6)(d) has not been cited as vague or difficult to understand and as a result has not been modified.

The term “managed” was primarily used in the facility and truck trip reporting sections which have been deleted from the original proposal in the Staff Report.

The term “partnership or sole proprietorship” has been updated to include their delegate or designee as the commenter requested.

The term “operated” was primarily used in the facility and truck trip reporting sections which have been deleted from the original proposal in the Staff Report. The commenter is not referring to the other parts of the regulation which may have used the term “operated”.

The definition of “responsible official” has been clarified to only apply to records retention requirements and not the other portions of the regulation.

The regulation was modified to make more clear by adding language to expand sections 2012.2(b)(2)(H) to give an example that a vehicle returns to its home base daily if it returns to its base 9 out of 10 times.

Section 2012.2(b)(2)(J) was modified to be a “yes or no” question instead of requiring fleets to count the number of trucks. This change simplifies reporting by asking whether a majority of the vehicles do or do not stay within 50 miles of the vehicle home base on a given day. The section was also changed to give fleet managers more flexibility in how to complete the reporting.

Section 2012.2(b)(2)(K) was not modified as section 2012.2(b)(2) allows fleets to estimate their responses to sections 2012(b)(2)(A-Q) and staff expects this particular question to be primarily to answered based on a fleet manager’s knowledge and experience of their fleet operation.

The term “sustainability plan” was not necessary to define because staff’s intent was for the respondent to identify any written plan to support sustainability goals. This question seeks to understand whether sustainability is considered in decisions made at the organization. Creating a specific definition would add complexity and unnecessary burden that is inconsistent with the intent of the question.

Staff has not formally defined the terms “typically” or “representative”. These terms were used most often in the facility and truck trip section which was deleted. Staff has

inserted additional language to better describe what “typical” and “representative” means in the context of the individual questions being asked where the terms are still used. Staff specifically used these terms to give respondents flexibility in how to answer these questions and to minimize the amount of information that would need to be collected. These changes will improve the overall quality of the responses and simplify reporting for respondents.

Large Entity Reporting – Some Vehicles Do Not Have Odometers

Comment: Commenter states they have some responsive vehicles that do not measure usage by miles and do not have odometers and have hour meters instead. [OP-110]

Agency Response: No changes were made to the regulation in response to this comment. Vehicles without odometers tend to have low daily mileage. Fleets can use information such as dispatch records or hour readings estimate their mileage, or alternatively capture the mileage for a representative period to estimate the typical mileage. Because the reporting requirement has wide response categories for entities to fill, entities can place their vehicles whichever response category they deem the most appropriate. Staff anticipates that fleets will place these vehicles without odometers into the lowest mileage response category, but will work with regulated entities through the implementation process to provide guidance.

Large Entity Reporting – Remove Language Potentially Requesting Home Addresses

Comment: Commenter asks the rule be revised to not require disclosure of home addresses of employees where a vehicle may be assigned. [OP-108]

Agency Response: Staff has clarified the language to explicitly prevent entities from reporting addresses that may be employee’s home addresses.

Large Entity Reporting – Expand Subcontractor Contract Length

Comment: Commenter states the reporting requirements should be changed to cover all contract lengths, as drayage contracts are often 90 days or less, and the current year or more threshold would miss these fleets. [OP-76]

Agency Response: In response to this comment staff has removed the limitation to contract lengths of only one year or longer to ensure data are gathered about all entities that are contracted to deliver items or perform work for a regulated entity. This change will help ensure sufficient data are collected to craft effective fleet rules.

Large Entity Reporting – Explain Thresholds Used for Large Businesses and Large Fleets

Comment: Commenter asks CARB to explain the \$50M US-wide revenue regulatory basis, stating that this will capture entities with very little California presence. Commenter also asks the basis for the use of 100 vehicles in the fleet size requirement. [OP-108]

Agency Response: As stated in the Staff Report, the thresholds were selected to include a wide range of entities because nearly all rely on services that use trucks and buses, and all are likely to be directly or indirectly affected by a future ZEV requirement because a general goal established in the mobile source strategy and the SIP is to accelerate the use of ZEVs everywhere feasible. The revenue threshold was selected as a way to exclude small businesses from the reporting requirement, to reduce the number of entities that report, and provide a representative data set of the wide range of business models and vehicle operations in California. Large entities have adequate resources to respond to questions about their existing operations and are more likely to keep information electronically than smaller entities which means their reporting burden would be less significant. Information from large entities is expected to provide a robust data sample to help answer questions about sector-by-sector variations in vehicle usage and contracting for transportation services. The 2019 tax year was selected as a baseline year so that regulated parties would know whether they are subject to the regulation when the regulation was considered by the Board.

Large Entity Reporting - Vehicle Definition Consistency

Comment: Commenter suggests the definitions under the manufacturer requirement sections (1963 through 1963.5) also be applicable to the large entity reporting sections (2012 through 2012.3). [OP-104]

Comment: Commenter states that the vehicle definition in section 2012 should be the same definition as in section 1963. [OP-106]

Agency Response: No changes were made to the regulation in response to these comments. First, the Large Entity Reporting refers to “on-road vehicles with a GVWR greater than 8,500 lb.” This is a specific and understood phrase that does not need additional description. Second, the definition used in 1963 is a technical definition that may confuse or mislead stakeholders subject to the Large Entity Reporting. For these reasons, staff has not added a definition of “vehicle” to the Large Entity Reporting requirement.

Large Entity Reporting – Apply Same Fleet and Revenue Size Threshold

Comment: Commenter states CARB should apply the same fleet and revenue size thresholds to public agencies as are applied to private companies. [OP-110]

Agency Response: No changes were made to the regulation in response to this comment. Public fleets have been identified as a beachhead target well-suited for electrification and information is needed to determine how quickly these fleets can electrify. The Board reaffirmed this direction and strengthened it by directing staff to return with fleet rules that will transition public fleets to fully zero-emission capable by 2035. Because this goal will apply to all public fleets, information is needed from all public fleets in order to develop effective fleet rules.

Large Entity Reporting – Level Playing Field Analysis

Comment: Commenter states the regulation does not explain how in-state companies will not experience a competitive disadvantage vs out-of-state companies doing business in California. [OP-58]

Agency Response: No changes were made to the regulation in response to this comment. As part of the Original Proposal, staff performed an analysis on the “Significant Statewide Adverse Economic Impact Directly Affecting Business, Including Ability to Compete”. Staff determined that the ACT regulation would not have a significant statewide adverse economic impact on businesses or private persons. The manufacturer ZEV sales requirement is anticipated to have a net positive effect on the state. The large entity reporting affects both in-state and out-of-state businesses that do business in California equally so as a result, it is not anticipated to adversely California businesses.

The ACT regulation only applies to manufacturers and does not impose costs on fleets, other than minimal reporting costs for large entities. The regulation is aimed at larger companies and ensures that employee-based companies as well as companies using a contractor model are on a level playing field.

Large Entity Reporting – Lower Size Threshold

Comment: Commenter states that CARB should lower the reporting threshold for firms in trucking segments with high concentrations of contractors like port trucking, and package delivery. [T1-87]

Comment: Commenter states that lowering the firm size threshold to 15 or more dispatched vehicles; clarifying the distinction between subhaulers and subcontractors to ensure that all businesses operating under all length contracts are covered. [T1-88]

Agency Response: The approved regulation was modified from the original proposal to lower the fleet size threshold from 100 to 50 vehicles. Based on available information, staff believes that lowering this number even further would result in exponentially more fleet respondents with diminishing returns on the value added by the additional data.

Large Entity Reporting – Limit Scope Based on Future Fleet Rules

Comment: Commenter states that staff should outline the likely paths of the Fleet Rule prior to finalizing the data request rule, identify the specific data gaps to be filled by the rule, and narrow the scope of the data requests to those issues relevant to the subsequent end-user rule [T1-22]

Agency Response: No changes were made to the regulation in response to this comment. Staff are attempting to broadly capture information from a variety of businesses to understand which fleets have vehicles that are suitable for electrification, and to better understand where and how infrastructure is needed to expand the market beyond depot charging as part of determining the path for the Fleet Rule. See discussion on the timing and content constraints of the large entity reporting requirement as it relates to future fleet strategies in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Bifurcate the Large Entity Reporting from the ACT Regulation”. Also, see discussion related to staffs attempts at narrowing the scope and burden of the large entity reporting requirement, including completely removing the facility reporting section and implementing numerous clarifications and guidance language in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Regulation Requires Hard-to-Collect Information”.

Large Entity Reporting – General Support

Comment: Comment states SCE supports the ACT regulation and stands ready to facilitate the transformation of the transportation sector across all medium- and heavy-duty segments. [T1-04]

Comment: Commenter states they support the effort to collect more and better information to inform future regulation, [T1-06]

Comment: Commenter states they support CARB's proposed reporting requirement. [T1-31]

Comment: Commenter state as they support fleet reporting standards. [T1-52]

Comment: Commenter supports efforts to streamline reporting requirements, stating more needs to be done. [T1-77]

Comment: Commenter supports the reporting requirements and approve of the options presented by staff. The current proposal would lead to quicker collection of the data, which would allow for expediting the fleet requirements. [T1-85]

Agency Response: Staff appreciates stakeholder support in collecting this critical information.

Future ZEV Policy – Adopt Zero-Emission Fleet Rule in 2021

Comment: Commenter states CARB should adopt corresponding fleet purchase requirements in 2021. [OP-02, OP-41, OP-46, OP-48, OP-117, OP-122, T1-13]

Comment: Commenter states CARB should adopt a fleet rule by July 1, 2021, effective January 1, 2024. [OP-13]

Comment: Commenter states CARB should accelerate development of a ZEV fleet rule. Commenter states the fleet rule should be brought forward in time to make sure that a stronger rule is matched with the fleet requirement at the same time. [OP-15, T1-40]

Comment: Commenter states CARB should expedite the "fleet rule" to encourage conversion of large fleet operations to ZEVs. [OP-64]

Comment: Commenter states CARB should expedite the fleet rule by using existing data and augmenting it to finalize, rather than waiting for the ACT regulation reporting requirements to be submitted. CARB should adopt fleet purchase requirements by 2021 to make simultaneous with the ACT regulation. [OP-72]

Comment: Commenter states CARB should adopt fleet purchase requirements earlier than staff's proposal, with implementation in 2021. [OP-83]

Comment: Commenter urges CARB to continue to move forward with development of the fleet regulation with a goal simultaneously broaden infrastructure and financing options. Commenter states CARB should also consider light-duty ZEV rule targeting 100 percent adoption by 2035 to achieve 80 percent GHG reduction by 2050. [OP-94, T1-43]

Comment: Commenter states CARB should adopt fleet purchase requirements earlier than staff's proposal, specifically in 2021 with implementation in 2024. [OP-96, T1-17, T1-48]

Comment: Commenter urges CARB to include flexibilities that allow fleet purchases to access incentive funding even as they are mandated to purchase ZE trucks. CARB needs to adopt fleet mandates that mirror the sales targets of the proposed regulation. [OP-99]

Comment: Commenter states CARB should adopt fleet purchase requirements earlier than staff's proposal, with implementation in 2024. [OP-119, OP-121-Form, OP-123-Form, OP-124-Form]

Comment: Commenter states they support a fleet purchase standard. [T1-52]

Comment: Commenter believes that a multiple fleet rule approach would be more effective than one blanket fleet rule to be implemented in 2024. The Commenter thinks

this strategy will help provide certainty to manufacturers that demand further products to exist on a complementary timeline. [T1-79]

Comment: Commenter appreciates the commitment from the Board to develop a suite of fleet programs with the same timeline. Commenter encourages the Board to accelerate the development of fleet rules for those segments that are identified by staff to best positioned for electrification. [T1-79]

Comment: Commenter states the fleet mandate should happen quicker. [T1-81]

Agency Response: No changes were made to the regulation in response to these comments. The Board set a goal of bringing a fleet rule for consideration by the end of 2021, which is earlier than initially proposed, when they approved the Resolution. Staff held a kickoff workshop in February 2020 to begin that rule development process. Staff presented and solicited feedback on a number of ideas ranging from purchase requirements to fleet standards and contracting requirements. Further discussion on the ZE fleet rule is premature as the proposal is still under development and is a separate rulemaking from the ACT regulation.

Future ZEV Policy – Set Clear 100 Percent ZEV Targets

Comment: Commenter states CARB should set aggressive goals to achieve ZE vehicles in targeted categories and explain how the goals would tie into state and federal emissions reduction goals. [OP-01, OP-59, OP-72, OP-83, OP-96, OP-119, OP-121-Form, OP-123-Form, OP-124-Form, T1-48]

Comment: Commenter recommends that staff develop an analysis for ZEV truck sales similar to the one CARB staff presented to the Board for passenger vehicles. Commenter states that the presentation, titled "Critical Need for Actions to Accelerate the Transition to a Zero-Emission Future" clearly showed the need to increase the rate of passenger vehicle sales of ZEVs to near 100 percent by 2035, in order to achieve an 80 percent reduction in GHG emissions by 2050. A similar plan will be necessary to guide the vision for trucks. [B1-10]

Comment: Commenter states CARB should outline long-term objectives to achieve 100 percent zero-emission trucks in various categories while explaining how the manufacturer requirement proposed fits with those objectives and Federal/State air quality and climate goals. [OP-02, OP-41, OP-46, OP-48, T1-13]

Comment: Commenter states CARB should set a goal for all trucks to be zero-emission by 2040. [OP-13]

Comment: Commenter states CARB should specify target dates for 100 percent ZEV by truck sectors, similar to CARB's stated 100 percent delivery trucks by 2040 goal. [OP-15]

Comment: Commenter states CARB should identify long-term ZEV goals for medium- and heavy-duty vehicles consistent with state GHG goals. [OP-33]

Comment: Commenter states CARB should set aggressive goals for ZEV adoption beyond 2030. [OP-40, OP-64, OP-78, OP-126-Form]

Comment: Commenter states the Board should direct staff to develop and share with the Board its analysis for increasing sales of ZEV trucks beyond 2030 that is consistent with the states air quality goals. [OP-94]

Comment: Commenter states CARB should outline long-term objectives to achieve 100 percent zero-emission trucks in all categories. [OP-117]

Comment: Commenter states CARB should inform when all truck sales must be 100 percent zero-emission, which would set goals to inform planning and adaptation for infrastructure. [OP-122]

Comment: Commenter states CARB should set a goal for one hundred percent ZEVs and expedite the timeline for a fleet rule. [T1-18]

Comment: Commenter states CARB should aim for one hundred percent ZEVs in the foreseeable future. [T1-39]

Comment: Commenter recommends an increase of the yearly and final percentage goals from 24 to 30, and urge setting overarching and weight vehicle class specific timelines for 100 percent ZEVs. [T1-98]

Agency Response: The approved regulation includes a number of modifications to the original proposal to significantly increase the number of ZEVs sold in California across all vehicle groups from 2024 to 2030 and to increase the percentage requirements from 2030 to 2035 rather than keeping them constant during that period. The timeframe has also been extended until 2035 with continued increases in annual sales. In addition, the Board directed staff to work towards an ultimate goal of 100 percent zero-emission where feasible by 2045 when they approved the Resolution. In addition, the Board directed staff, through the approved Resolution, to set earlier targets for key beachhead markets including:

- Drayage trucks, last mile delivery, and government fleets: 100 percent zero-emission vehicle fleets by 2035
- Refuse trucks, and local buses: 100 percent zero-emission vehicle fleets by 2040
- Utility fleets: 100 percent zero-emission capable vehicles by 2040

Strong policy targets have guided the development of the ACT regulation and will guide the development of the Advanced Clean Fleets regulation with the goals of achieving carbon-neutrality in California by 2045, achieving a 100 percent zero-emission drayage

fleet by 2035 and a 100 percent zero-emission fleet where feasible by 2045 as outlined in Executive Orders B-48-18 and N-79-20.

Future ZEV Policy – Additional Credit for Strong Plug-in Hybrids

Comment: Commenter states that PHEVs that get between 75 and 100 percent of annual VMT from off-board power sources such as grid electricity should generate additional credit in a future fleet rule if a crediting system is developed, if fleets can prove through telematics, etc., that the VMT is within that range after a period in-use. [OP-50]

Agency Response: No changes were made to the regulation in response to this comment. The approved ACT Regulation does not require fleets to make vehicle purchases, so the comment is not applicable to this regulation. As staff works on future ZE fleet rules, staff can consider at that time how to credit plug-in hybrid vehicles and whether to use in-use, real world data.

Future ZEV Policy – Considerations to Include in Future ZE Fleet Rule

Comment: Commenter states that waste company investments in alternative fuel vehicles and infrastructure should influence future fleet purchase requirements. [OP-69]

Comment: Commenter states that transition to electric power away from natural gas has the waste industry in a quandary about capital investments and the air quality trade-offs that might occur as a result of the proposed regulation. [OP-81]

Comment: Commenter states they need assurance from CARB that NGV investments will not be stranded. Commenter states that CARB is leapfrogging the local air districts and Short-Lived Climate Pollution Strategies to pursue an ACT regulation that will not achieve the same near-term NOx and carbon intensity reductions compared to the existing emission inventory. [OP-101]

Agency Response: No changes were made in response to these comments. Staff does not agree the ACT regulation is inconsistent with other air quality programs such as the Short Lived Climate Pollutant strategies. The ACT regulation requires manufacturers to sell ZEVs but does not require fleets to purchase ZEVs. Because the ACT regulation is a manufacturer rule, manufacturers need to identify market segments they can compete in and offer competitive products that fleets will want to purchase. Fleets do not face a requirement to purchase ZEVs in the ACT regulation, therefore the comment is not relevant to the manufacturer ZEV sales requirement. Rather, the comment appears to be directed at a future fleet rule. The information being collected in the mandatory fleet reporting in the ACT regulation will provide staff with information needed to evaluate concern in a future zero-emission fleet rule.

The impacts of a ZE fleet rule will be evaluated at the time of that rulemaking and is premature for this discussion. The impacts of related programs such as the Short Lived Climate Pollutant strategies should be addressed during development of these future zero-emission fleet rule. Staff invites interest parties to participate in these upcoming rulemaking and provide relevant information to staff.

Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions

Comment: Commenter states CARB should support fair trucking practices as a part of the rulemaking language to address misclassification related issues, as misclassified companies are less able to comply with clean trucking rules. [OP-76]

Comment: Commenter states CARB needs to address the issue of misclassification of drivers as dependent contractors. Many of the misclassified drivers earn minimum wage and can't afford the cost of purchasing or maintaining electric trucks. [T1-88, T1-94, T1-95]

Comment: Commenter states that in order to achieve compliance with the new rules, CARB needs to ensure the companies that are employing these drivers are taking responsibility for the transition to clean trucks. [T1-88]

Comment: Commenter states California needs to do its part to make sure these regulations spread the burden between companies and workers. [T1-89]

Comment: Commenter states that misclassified independent contractors are important to address to ensure compliance with air quality regulations, and requests more stringent reporting requirements. [T1-90]

Comment: Commenter states when drivers are misclassified, they are being deprived of their minimum wages, benefits, and workers' compensation. Commenter states CARB needs to address the issue of misclassification of drivers as independent contractors that ties them into economic stresses. [T1-91, T1-92]

Comment: Commenter states many of the drivers have a financial burden due to low minimum wages and the cost of maintenance on clean trucks. [T1-92]

Comment: Commenter urges CARB to come up with a policy or act to help the issue of misclassification of drivers and to provide them with more benefits and insurance. As CARB has noticed, drivers can't afford the cost of purchasing or maintaining electric trucks [T1-93]

Agency Response: To better capture information on this market segment, staff has reduced the fleet size threshold from 100 to 50 to ensure smaller fleets, which would be more likely to have owner/operators contracting for work, are included in the data gathered. Additionally, brokers are required to provide additional information and detail

about contracted trucking practices, require respondent entities to keep and provide records on request about dispatched trucks, and have changed the requirement for reporting contracted entities from a 1-year contract threshold to contracts of any length. These changes are anticipated to enable staff to better assess how fleets that use contracted trucks operate, especially from the drayage and delivery sectors. No further changes have been made in response to these comments as the issues raised are beyond the specified scope of the rulemaking.

Future ZEV Policy – Authority to Regulate Businesses Who Do Not Own Vehicles

Comment: Commenter states they are uncertain whether CARB's statutory authority includes the ability to regulate purchases of businesses that are indirect sources as they do not own vehicles themselves. [OP-108]

Comment: Commenter states that it is not clear that the legislature's grant of statutory authority to CARB would include the ability to impose a regulatory purchase requirement on businesses that are indirect sources of emissions -- i.e., those businesses that rely on trucking to supply their needs on deliver their products, yet do not own or control the vehicles used. Commenter states that such an extension of regulatory power, if the state deems it appropriate, should be granted by the legislature, and not imposed through the regulatory process. [B1-07]

Agency Response: The comments are outside the scope of the ACT regulation. The comments are specific to a fleet purchase concept and, therefore, are not applicable to the approved ACT manufacturer requirements.

Future ZEV Policy – Five Percent Turnover Requirement for Delivery Vehicles

Comment: Commenter states taking 5% of the polluting delivery trucks and vans off the road, starting with the older or more polluting vehicles would be economically feasible. In 10 years, half of delivery vehicles should be emissions free if new purchases are required. [OP-34]

Agency Response: No changes were made in response to this comment. The commenter is advocating for two distinct policies, a requirement for fleets to turnover their vehicles and a requirement that a portion of new purchases be zero-emission. Because the ACT Regulation does not regulate fleet's vehicles, the commenter's proposal to turnover vehicles would be outside the scope of the regulation. Staff will evaluate strategies to turnover requirements and potential accelerated replacement as part of the upcoming ZE fleet rule. The ACT regulation requires manufacturers to sell zero-emission medium- and heavy-duty vehicles across all vocations and is anticipated to result in significant electrification of delivery trucks and vans. By regulating all Class 2b-8 vehicles, the ACT regulation achieves greater ZEV penetration than a regulation focused narrowly on delivery vehicles could achieve.

Future ZEV Policy – Support Workforce Development

Comment: Commenter states CARB needs to invest in workforce development that supports the transition to ZE transportation and benefits economically challenged communities. [OP-99]

Agency Response: No changes were made to the regulation in response to this comment. The Board directed staff through the Resolution to identify and commit additional future resources to addressing indirect costs associated with the ACT regulation, including, but not limited to, workforce development and training, when they approved the Resolution. Staff recognizes that state investment that supports California workers can expand the benefits of the regulation, and deliver much-needed jobs training and employment opportunities to communities across the state. Staff's efforts in this area will seek to leverage, to the maximum extent possible, existing and scalable curriculums already utilized by early adopters of zero-emission heavy-duty vehicles.

Out of Scope – Incentive and Funding Policies

Comment: Commenter states more emphasis should be put on an incentive-based program that focuses on those fleets where the current ZEV technology is economically viable. Commenter states that the current Public Safety Power Shutoff events are very real, and regulations that mandate electric vehicles on businesses must be well thought out and thoroughly discussed with the impacted businesses. [OP-58]

Comment: Commenter states CARB should create combined funding for ZEV and NZEVs and infrastructure rather than have separate funding opportunities with different requirements and timelines. Incentives should be structured to support large scale near-zero deployments until 2027, and additional funds for electric and hydrogen infrastructure. [OP-60]

Comment: Commenter states concern that failure to better coordinate funding and planning among the many state, regional and local agencies could jeopardize the entire transition and adoption of EV's. Commenter is concerned with the inability to purchase vehicles using HVIP for state mandated vehicles. Insufficient funding for the grid upgrades and equipment installation can threaten timeline availability for heavy-duty EV's, and continued availability of purchase incentives for fleet owners is crucial and that available funds are multi-year rather than annual funding. Commenter urges CARB that financial incentives be developed to minimize obstacles to ZEV adoption by consolidating vehicle and infrastructure funding programs into a single program. [OP-74, T1-11]

Comment: Commenter states significant incentive funds should be identified and deployed to construct the necessary ZEV infrastructure and reimburse fleets for increased marginal costs of purchasing and operating ZEV trucks. [OP-87]

Comment: Commenter states that challenges identified in the Investment Plan such as purchase cost, ZEV infrastructure, service and support, secondary market undeveloped for ZEVs, and technology concerns need to be addressed to further advance the electric truck market. [OP-98]

Comment: Commenter states CARB needs to make adequate and reliable funding through 2030 such as HVIP and LCFS. [OP-99]

Comment: Commenter states CARB should recognize the need to preserve the HVIP funding for CNG fleet and create a demand for instate RNG from SB 1383. [OP-101]

Comment: Commenter states that hydrogen fuel cell infrastructure can be available for fuel cell trucks if LCFS credits and HVIP are made available to help pay for fuel cell electric trucks and hydrogen fueling infrastructure. Commenter provided supporting documentation, articles, and references to support their comment. [OP-107]

Comment: Commenter states there should be guaranteed incentives that will help with costs of operations and capital purchase reach cost parity as their current fleets. [OP-123-Form-905]

Comment: Commenter states there should be guaranteed ZEVs on-road by either "carrot on a stick" incentives or enforced regulations. [OP-123-Form-1241]

Comment: Commenter states that government-driven investment and incentives are critical for the success of the infrastructure build out. [OP-123-Form-1161]

Comment: Commenter states there are insufficient incentives for heavy-duty trucks and vehicles. [T1-05]

Comment: Commenter states CARB should align with other state agencies regarding implementation and funding and provide resources to advance the ZEV industry across the state. [T1-15]

Comment: Commenter states that CTA supports further incentives to bridge the gap between outdated and cleaner engine technologies. [T1-46]

Comment: Commenter states they would like to see ZEV vehicles be pushed through incentives and not mandates. [T1-47]

Comment: Commenter states CARB should take leadership in spurring the development and investment in long-range zero-emission trucks with hydrogen or even long-range battery-electric trucks. [T1-66]

Comment: Commenter suggest CARB introduce a truck buyback program to convert polluting trucks into truck-homes to create low-income housing near resources that minimize vehicle miles travelled. [OP-70]

Comment: Commenter states CARB should focus on how to incentivize pickups; specifically given they're driven by small businesses and they may not be able to earn LCFS credits. They don't think truck market can transform without commitments by the state and hope CARB continues to provide incentives in those regulated categories beyond 2024 or 2027 timeline. Commenter states that current timeline as structured in regulation are dependent on the state providing sufficient and consistent funding for HVIP, CORE, pilots and demonstration projects. [T1-79]

Comment: Commenter states that successful electrification of the HD sector requires a holistic approach addressing not just vehicle availability, but also infrastructure, costs, and potential fleet requirements. Commenter states that purchase incentives, fueling incentives, and infrastructure programs are programs that are generally not designed with HD pickups in mind. Commenter also states that a fleet purchase rule cannot support the sale of HD pickups. [B1-16]

Agency Response: No changes were made to the regulation in response to these comments. The comments relating to funding policies and incentives are outside the scope of this regulation. Staff recognizes that incentives can play an important role in the early adoption of new technologies. However, the cost analysis for this regulation did not include any grants or rebates and the regulation is not predicated on the availability of incentives. The existing LCFS regulation has been in place for a decade and fleets can take advantage of it directly when dispensing low carbon fuels.

CARB offers a portfolio of incentive programs currently which are designed to incentivize technology from early demonstrations to full scale commercial deployment. The demonstrations and pilot projects funded through our incentive programs help reduce costs, increase experience with the new technologies, and expand the overall ZEV marketplace. The ACT regulation is needed to drive manufacturers to develop new ZEV products and generate SIP-creditable emissions reductions beyond what is feasible through incentive programs. By achieving larger economies of scale, the ACT Regulation will help make ZEV technology more viable across sectors and fleets.

Out of Scope - Scale Back the Low NOx Omnibus

Comment: Commenter states the Low NOx Omnibus Rule should be scaled back substantially to allow for a cost-effective and growing transition to medium- and heavy-duty ZEV technologies. [OP-87]

Agency Response: No changes were made to the regulation in response to this comment. This comment is outside the scope of ACT regulation and pertains to a separate regulation, the Low NOx Omnibus regulation.

Out of Scope – Existing In-Use Regulations

Comment: Commenter states CARB should allow older truck models to operate longer in California. [OP-25]

Comment: Commenter talks about his experience with the Truck and Bus rule and grant programs for cleaner trucks. Commenter states that he received a notice in April 2019 stating that his truck will not be allowed on the road after January 1, 2019, and states that this was the first notice that he received. Commenter states that he cannot afford another truck and that there is no financial assistance or grants available for the purchase of another truck. [OP-53]

Agency Response: No changes were made to the regulation in response to these comments. The regulation does not affect in-use vehicles and applies to a portion of new vehicle sales. Comments referring to existing in-use requirements such as the Truck and Bus Regulation are outside the scope of this regulation.

Out of Scope – Carbon Tax

Comment: Commenter opposes the ACT regulation and states that electric cars are not a public benefit. Commenter states polluting vehicles should be taxed or regulated to reduce emissions, including getting older noncompliant vehicles off the road. Commenter states that inflexible mandates are costly and ignore possible solutions such as natural gas trucks. [OP-36]

Agency Response: No changes were made to the regulation in response to this comment. The comment is outside the scope of the regulation, as the regulation only establishes requirements for introducing new heavy-duty vehicles and engines. However, CARB notes that it has promulgated several regulations, including the Truck and Bus regulation (13 CCR section 2025) that require on-road truck and bus fleets to ensure that in-use, older, heavy-duty vehicles meet performance standards that are equivalent to new 2010 emission standards.

Out of Scope – Road Use Charges

Comment: Commenter states a "Road Use Charge" system is needed, and to push for legislation requiring it, stating SB1077 provides feasibility. [OP-49]

Agency Response: No changes were made to the regulation in response to this comment as it is outside the scope of the regulation, however, staff appreciates the input. Staff will monitor such efforts as staff begins work on ZE fleet rules and other related policies.

Out of Scope – Effects of Climate Change are Already Here

Comment: Commenter shares an anecdote on the impacts of wildfires and poses an open question as to whether the regulation is too late or not. [OP-47]

Agency Response: No changes were made to the regulation in response to this comment. The past few years have clearly shown the impact that climate change is causing on the state's forests and exasperating wildfires across the state. As wildfires clearly have a significant impact on California's air quality, more needs to be done to mitigate the effects of climate change. CARB will continue to take bold action to reduce pollution and protect the health of Californians. This rulemaking is a key component of CARB's long-term strategy to reach carbon neutrality and protect the health of Californians.

Other – Other Waste Industry Requirements

Comment: Commenter states the rule should take into account and support efforts made to date along alternative fuel pathways. The waste industry is mandated by SB1383 to recycle and recover 75% of organic waste by 2025, which they suggest should be achieved by digesting into low carbon fuels to use in conventional vehicles. [OP-32, OP-44]

Agency Response: No changes were made to the regulation in response to this comment as it proposes a change that is beyond the scope of this rulemaking action.

Other – General Opposition

Comment: Commenter opposes the regulation, stating the voters of California should have a say in it. [OP-16]

Comment: Commenter states they are opposed to rule implementation, as requiring all trucks to be electric is not sustainable and rules must be voted on by taxpayers. [OP-18]

Comment: Commenter states this rule is not the solution, as California consumers cannot afford increases in the cost of living, and states that this rule will cause the cost of living to increase. [OP-19]

Comment: Commenter opposes this action. [OP-20, OP-23, OP-26, OP-31]

Comment: Commenter states opposition, as the regulation is too burdensome. [OP-24]

Comment: Commenter opposes rules that affect small businesses or truckers. [OP-30]

Comment: Commenter states opposition to rule as electric vehicles are neutral in benefit and mandates are inflexible, costly, and ignore other solutions such as natural gas trucks. [OP-36]

Comment: Commenter suggest a sales mandate is no longer warranted because vehicle penetration will grow organically. Commenter states a sales mandate could cause manufacturers to deploy the technology into customer operations for which it is not well suited, thus having the effect of impeding market acceptance. [OP-74]

Comment: Commenter states opposition as the proposal will increase the price of everything exponentially and CARB should be concerned about pollution (including that created by electricity generation). Commenter also asks if the rule will apply to illegal aliens. [OP-21]

Comment: Commenter opposes due to negative impact to California economy that is not justified by the proposed results. [OP-27]

Comment: Commenter opposes as forcing manufacturers and companies outside of California to go to zero-emissions "upends" small businesses and does not achieve anything. [OP-29]

Comment: Commenter states strong opposition due to the impact on the health and finances of California. [OP-42]

Comment: Commenter opposed to rule because of the economic damage to California and the insignificance of GHG benefit globally compared to other countries' GHG emissions. [OP-57]

Comment: Commenter has concerns about maintenance cost when drivers switch from conventional trucks to zero-emission trucks. They believe it would cost drivers 70% more than making this change. [T1-91]

Comment: Commenter opposes rule as a waste of taxpayer funds, and states there is no such thing as a "zero-emission truck" as electricity generation causes emissions. [OP-71]

Agency Response: No changes were made in response to these comments. Staff recognizes that all regulations can result in positive and negative changes. The ACT regulation has undergone a four-year public process with eight public workshops, five public workgroups, two focus group meetings, and well over one hundred meetings with stakeholders. Through this process, staff has developed a proposal that maximizes public benefits while minimizing negative impacts and adverse effects.

Staff acknowledges that vehicles with zero tailpipe emissions may generate upstream emissions as a part of fuel production. The well-to-wheel emissions of zero-emission trucks was already analyzed in Chapter VI of the Staff Report. Due to the lower upstream and downstream emissions of electricity and hydrogen versus gasoline and diesel, zero-emission trucks are anticipated to upstream and downstream emission benefits and produce lower emissions than all other technology options. CARB is

simultaneously working to reduce emissions of other combustion-powered vehicles through regulations such as the Low NOx Omnibus and Low Carbon Fuel Standard.

Staff evaluated costs to the state as a whole and the total cost of ownership for a vehicle. Through these analyses, staff found that while zero-emission vehicles will cost more upfront due to higher vehicle costs and additional infrastructure costs, they will cost less over their lifetime due to lower fuel costs, LCFS revenue, and reduced maintenance expenses. ZEVs placed into well-suited applications will see a positive TCO versus their diesel counterparts, and more applications will show a payback over time as ZEV costs decline.

A number of studies from groups including ICF International, the North American Council on Fuel Efficiency, Union of Concerned Scientists, and University of California, Los Angeles have found that ZEVs are both cleaner on a well-to-wheel basis as well as superior economically versus gasoline, diesel, and natural gas options.

Impacts to local government and state government revenues are estimated in Attachment C to the 30-Day Changes. The ACT regulation is projected to have a slightly positive fiscal impact on local government due to increase in sales taxes and utility user taxes, and a significant decrease in revenue to the state government largely due to a decrease in gasoline and diesel fuel taxes.

As part of the Staff Report and 30-Day Changes, staff performed a macroeconomic analysis on the ACT regulation. The analysis found that the regulation is anticipated to have minimal effects on the state's economy and is projected to result in a slight increase in economic indicators. Because zero-emission trucks are anticipated to have a positive total cost of ownership, the regulation results in cost savings in the trucking industry which spreads through the California economy. Because the proposal only affects major manufacturers and large entities, the rule is not anticipated to have major impacts on small businesses and may create new opportunities.

The ACT regulation requires manufacturers to sell ZEVs but does not require fleets to purchase ZEVs. Because the ACT regulation is a manufacturer rule, manufacturers need to identify market segments they can compete in and offer competitive products that fleets will want to purchase. Broadly, vehicles used for local delivery appear better suited while work trucks present more challenges. Manufacturers most likely will not target market segments poorly suited for electrification and will instead focus on the ones that electrification is best suited for. The ACT Regulation applies to medium- and heavy-duty manufacturers, large businesses, large fleets and brokers, and government agencies. It does not directly affect small businesses, although some small businesses such as infrastructure installers and electric vehicle service providers may benefit from the effects of the regulation. The regulation does not apply to individuals.

Staff's TCO analysis and research show that ZEVs have lower maintenance costs per mile than conventional counterparts due to fewer moving parts, technologies such as

regenerative braking systems, and other efficiency improvements. Staff has not been made aware of any research or industry models that indicate contrary information.

Other – Comments Addressed in The Environmental Response

Comment: Commenter states the proposed ACT regulation may actually trigger a number of compliance responses producing environmental impacts. Waste recycling and composting activities are either overlooked or completely disregarded and they should better align and harmonize all of our environmental policies at the federal, state and local levels. Commenter is concerned that the Draft EA does not fully factor all the impacts and current initiatives on the state's solid waste management system, and states that the Draft EA should take into consideration the environmental and fiscal impacts from increased costs for construction and operation of new waste management facilities to support recycling replacement of off-road and on-road vehicles. [OP-81]

Agency Response: These comments are addressed in the “Environmental Response to Comments” document. See Response to Comments on Final Environmental Analysis prepared for the ACT Regulation ([Response to Comments link](#)) presented and approved by the Board at the June 25, 2020 hearing.

WRITTEN COMMENTS RECEIVED DURING THE 30-DAY COMMENT PERIOD

Manufacturer ZEV Sales – General Support

Comment: Commenter states general support for the proposed changes to the regulation. [RP1-01, RP1-02, RP1-03, RP1-04, RP1-06, RP1-08, RP1-09, RP1-11, RP1-13-Form, RP1-14, RP1-19, RP1-20, RP1-21, RP1-22, RP1-23, RP1-24, RP1-25, RP1-26, RP1-29, RP1-30, RP1-31, RP1-33, RP1-35, RP1-37, RP1-39, RP1-40, RP1-41, RP1-42, RP1-43, RP1-45, RP1-48, RP1-49, RP1-51, RP1-53, RP1-55, RP1-56, RP1-61, RP1-65, RP1-67, RP1-68, RP1-69, RP1-70, RP1-71, RP1-72, RP1-74, RP1-75, RP1-76, RP1-78, RP1-79, RP1-81, RP1-82, RP1-83, RP1-84, RP1-87, RP1-89, RP1-90, RP1-91, RP1-92, RP1-94, RP1-95, RP1-96, RP1-97, RP1-98, RP1-99, RP1-100, RP1-101, RP1-102, RP1-103, RP1-104, RP1-105, RP1-107, RP1-108, RP1-109, RP1-110, RP1-111, RP1-112, RP1-113, RP1-114, RP1-115, RP1-116, RP1-117, 118, RP1-119, RP1-120, RP1-121, RP1-122, RP1-123, RP1-124, RP1-125, RP1-126, RP1-127, RP1-128, RP1-129, RP1-130, RP1-131, RP1-132, RP1-133, RP1-134, RP1-136, RP1-138, RP1-139, RP1-140, RP1-142, RP1-143, RP1-144, RP1-146, RP1-147, RP1-149, RP1-150, RP1-151, RP1-152, RP1-153, RP1-155, RP1-156, RP1-157, RP1-158, RP1-159, RP1-160, RP1-161, RP1-162, RP1-163, RP1-164, RP1-165, RP1-166, RP1-167, RP1-168, RP1-170, RP1-171, RP1-173, RP1-174, RP1-175, RP1-176, RP1-177, RP1-178, RP1-179, RP1-180, RP1-182, RP1-183, RP1-184, RP1-185, RP1-186, RP1-187, RP1-188, RP1-189, RP1-190, RP1-192, RP1-198, RP1-199, RP1-200, RP1-201, RP1-204, RP1-207, RP1-208, RP1-209, RP1-211, RP1-217, RP1-220, RP1-221, RP1-

222, RP1-224, RP1-225, RP1-226, RP1-229, RP1-230, RP1-231, RP1-235, RP1-241, RP1-242, RP1-243, RP1-244, RP1-245, RP1-246, RP1-248, RP1-249, RP1-250, RP1-251, RP1-252, RP1-253, RP1-256, RP1-257, RP1-260-Form, RP1-261, RP1-262, RP1-264, RP1-267, RP1-268, RP1-270, RP1-271, RP1-273, RP1-276, RP1-282, RP1-286, RP1-290, RP1-291, RP1-292, RP1-293, RP1-295, RP1-300, RP1-301, RP1-309, RP1-311, RP1-319, RP1-323, RP1-325, RP1-331, RP1-336, RP1-339, RP1-341]

Comment: Commenter states his support on hydrogen vehicles. [RP1-13-Form-1746]

Comment: Commenter states his support on hydrogen vehicles and its fuel supply infrastructure. [RP1-13-Form-3346, RP1-191]

Comment: Commenter on behalf of several organizations supports the proposed modifications and updated reporting requirements. Commenter states the reporting requirement will collect sufficient data for development of fleet rules. [RP1-57]

Comment: Commenter applauds improvement of the proposed changes to the regulation and attaches a total cost of ownership for electric class 2b/3 pickup trucks and a press release from General Motors about their Ultrium Battery for the electrification of work trucks. [RP1-58]

Comment: Commenter suggests that there is confidence in battery electric truck infrastructure and CARB can confidently adopt a robust ACT regulation, knowing that agencies, industry, and other stakeholders are engaged in a comprehensive set of programs to meet the needs of battery electric ZEVs. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-188]

Comment: Commenter states that short-haul vehicles should be manufactured as ZEVs, and have incentives like tax breaks to comply. [RP1-213-Form-31]

Comment: Commenter states battery powered vehicles are an economical solution to combustion engine. [RP1-213-Form-557]

Comment: Commenter on behalf of Southern California Edison (SCE) state they support the ACT regulation and are ready to facilitate the transformation of medium- and heavy-duty vehicles to zero-emissions. [RP1-259]

Comment: Commenter on behalf of NRDC submitted form letters from 5,503 signatories providing general support for the propose changes to the regulation. [RP1-260]

Comment: Commenter states general support for the proposed changes to the regulation, and states that the rule will incentivize and accelerate battery development that will boost EV adoption nation- and world-wide. [RP1-278]

Comment: Commenter states general support for the proposed changes to the regulation, and highlights economic benefits: driving down ZEV battery costs for LD and HD, reducing need for expensive and often extremely dirty Peaker power plants,

facilitating renewable energy integration into the grid, spurring new technologies and businesses using new inexpensive energy storage in CA. [RP1-279]

Comment: Commenter states general support for the proposed changes to the regulation, and states that the rule will help the 122 CA hospitals and 58 major U.S. businesses that are a part of their coalitions achieve economic growth in a clean, resilient sector, and will generate almost 2 million new jobs for Californians, and save hundreds of millions if not billions of dollars in avoided costs from reduced emissions. [RP1-280]

Comment: Commenter recognizes need for infrastructure needs that will result from the ACT regulation, and stands ready with experience to provide what's needed. Commenter states general support for the proposed changes to the regulation, and states that the rule will help the state meet its climate action goals. [RP1-281]

Comment: Commenter states ACT is needed to bring ZE trucks into wide scale production, and complements other State electrification policies like LCFS that will bring both environmental and economic benefits. [RP1-294]

Comment: Commenter has 3,637 signatures of Californians that believe in the new proposal and urges CARB to reject any delays that might rollback the regulation. [RP1-306]

Comment: Commenter has 36 public comments addressed CARB that were submitted to the Union of Concerned Scientists by California scientists, engineers, doctors, and public health experts urging for a strong ACT Rule. [RP1-308]

Comment: Commenter provides general support for the ACT regulation on grounds of GHG emissions reduction, air quality, public health, and increasing battery development and resulting spread of EVs around the nation and the world. [RP1-318]

Comment: Commenter and the 563 signatories support the proposed changes to the regulation. [RP1-324]

Comment: Commenter on behalf of the Peninsula Interfaith Climate Action Organization supports the proposed changes to the regulation. [RP1-337]

Agency Response: Staff appreciates the supportive comments. Additional issues raised by commenters, if any, will be addressed in the following applicable sections.

Manufacturer ZEV Sales – Strengthen the ACT Proposal Increasing Sales Percentage Requirements

Comment: Commenter suggests earlier ZEV sales requirement beginning in 2022. [RP1-03]

Comment: Commenter states regulation should increase ZEV sales requirements for all classes and years, especially in early years. [RP1-08]

Comment: Commenter states that 100% of vehicles and machinery sold/imported into CA should be zero-emission by 2030. [RP1-27]

Comment: Commenter is in support of a 30% minimum sales requirement of zero-emission trucks by 2030 but suggests a higher manufacturer sales percentage is preferable. [RP1-47, RP1-50, RP1-52, RP1-54, RP1-59, RP1-60, RP1-62, RP1-63, RP1-126, RP1-135, RP1-137, RP1-258, RP1-262, RP1-263, RP1-268, RP1-269, RP1-274, RP1-275, RP1-279, RP1-304, RP1-321, RP1-322, RP1-327, RP1-328, RP1-329, RP1-332, RP1-333, RP1-334, RP1-335, RP1-338, RP1-340, RP1-342]

Comment: Commenter recommends a sales increase of 30% per year. [RP1-93]

Comment: Commenter states that they don't believe the transition should take 13 years. [RP1-160]

Comment: Commenter would like us to consider a different implementation of ZEV sales percentage requirements: 1% by 2025, 2% by 2026, 4% by 2027, 8% by 2028, 16% by 2029, 32% by 2030, and 64% by 2032. [RP1-212]

Comment: Commenter states we should adopt an even stronger ACT regulation. [RP1-219, RP1-260-Form-1556, RP1-261]

Comment: Commenter states that the 50% requirement by 2030 should also apply to the Class 2b-3 group, not just classes 4-8. [RP1-223]

Comment: Commenter states the ACT regulation should require 40% by 2030. [RP1-227]

Comment: Commenter urges CARB to adjust the zero-emission vehicle sales percentage for Class 7-8 trucks to start with 12% in 2024 and 80% by 2035. [RP1-236, RP1-289, RP1-297, RP1-299, RP1-310, RP1-314]

Comment: Commenter states all commercial trucks should follow the ACT regulation. [RP1-260-Form-1148]

Comment: Commenter states ACT should apply to all motor vehicles. [RP1-260-Form-1512]

Comment: Commenter states all trucks need to be switched to electric. [RP1-260-Form-2000]

Comment: Commenter states that the ACT regulation needs to include 100% zero-emission trucks by 2023. [RP1-260-Form-2024]

Comment: Commenter urges strengthening the ACT regulation to respond as quickly as the climate and air pollution crises demand. Commenter states that the ACT regulation should call for stronger ZEV sales requirements across vehicle classes and years. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-287]

Comment: Commenter states we should electrify all modes of transportation. [RP1-296]

Comment: Commenter states the ACT regulation should begin in 2025 with 30% ZEVs. [RP1-296]

Comment: Commenter states that Class 7-8 trucks should start with 12% in 2024 and 80% by 2034. [RP1-298]

Comment: Commenter states need for a stronger ACT regulation, comparing Norway's 50% requirement by 2030 to ACT's 30% requirement, and cites falling battery prices as one reason for why stronger ACT requirements are possible. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-305]

Agency Response: No changes were made to the regulation in response to these comments. See further discussion on staff's rationale for the regulation's requirements in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements".

Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements and Focus on Beachhead Markets

Comment: Commenter states that the proposed amendments maintain a fundamentally flawed regulatory structure and does not meet Board direction to revise and restructure the ACT regulation to pair manufacturer and fleet requirements. Commenter provides quotes from Board members from the December 12, 2019, Board hearing supporting commenter's statements. [RP1-218]

Comment: Commenter supports accelerating the transition to zero-emission technologies through a thoughtful policy approach that prioritizes promising sectors and use cases, often referred to as a beachhead or segmented approach. CARB staff's proposed amendments did the opposite by making the rule less segmented. OEMs are segmented in the medium- and heavy-duty market, a broad unsegmented approach may harm certain OEMs who only manufacture in less mature markets and benefit OEMs who happen to manufacture in the more easily electrified segments of the market. [RP1-241]

Comment: Commenter urges CARB staff to consider the value of additional segmentation to add clarity to the goals of this regulation and to strongly inform an effective fleet rule structure. Commenter suggests incorporation of beachhead strategies to quickly get to scale and reduce costs. [RP1-265]

Agency Response: No changes were made to the regulation in response to these comments. Please see the discussion about transitioning key beachhead markets to zero-emission in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements". In addition, the Board has directed staff through the Resolution to

return to the Board with a ZE fleet rule by the end of 2021 and to ensure the upcoming zero-emission fleet rules compliment the ACT Regulation. These commitments show CARB's overall direction to have both manufacturer and fleet rules, but do not mean that staff must present both simultaneously.

Manufacturer ZEV Sales – Manufacturer Requirements Are Too Stringent

Comment: Commenter states that ACT sets impossible goals for the deployment of currently non-existent heavy-duty vehicles. Commenter states that the 5% sales requirement by 2024 for Class 7 & 8 trucks is not realistic because ZEVs are not currently produced in the category, and would not be produced in enough quantity required to meet the requirement. [RP1-106]

Comment: Commenter recommends more realistic sales targets and suggests CARB maintain the original sales percentage requirements for MYs 2024-2030, rather than the revised sales requirements. [RP1-205]

Comment: Commenter states that CARB should revert to its original strategy that sales percentages would serve as a “floor” to bring large HD manufacturers into the zero-emission truck market and corresponding fleet rules would be used to meet the ZEV goals of maximizing deployments. [RP1-214]

Comment: Commenter states rule targets are too aggressive, as at-scale commercial production of Class 5/6 and Class 8 ZEVs is not expected by commenter until 2023-2024 timeframe, and not one that has been announced that the commenter can purchase in quantity that will meet their duty-cycle and dispatch business models. [RP1-232]

Comment: Commenter states the proposal to remove the exemption for Class 2b-3 pickup trucks until 2027 as originally proposed is not analytically supported and removes the more segmented original proposal. Commenter recommends reinstating the exemption for Class 2b-3 pickups until 2027 and returning to the sales percentages in the original ACT regulation for Class 7-8 tractors. Commenter supports the increased percentages for Class 2b-3 vans and suggests separating vans from pickups in Class 2b-3. [RP1-241]

Comment: Commenter states the increased sales mandate was not accompanied by any analysis of technical feasibility. [RP1-247]

Comment: Commenter expects small numbers of available tractors in 2021 and expects them to be used for regional haul and not long haul. Commenter predicts that rapid electrification of regional tractors may not lead to achieving the sales percentages and timelines in the 30-Day Changes for years 2024 and 2027. [RP1-265]

Comment: Commenter states targets are too aggressive. [RP1-284]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes that the ACT regulation's requirements are aggressive but

are technologically and economically feasible. These requirements are necessary in order to enable large-scale electrification at the scale necessary to meet the states air quality and climate goals. Without transitioning as much of the medium- and heavy-duty sector to zero-emission where feasible, California will not be able to meet air quality goals, climate change targets, nor its carbon neutrality goals. By setting stringent requirements on manufacturers, CARB is ensuring there will be sufficient vehicles available for fleets to purchase. CARB intends to develop future ZE fleet rules to ensure ZEV deployments in fleets. To supplement this effort, other California policies can provide incentives, ensure access to infrastructure, and achieve other goals that are needed for widespread transportation electrification.

Staff performed analyses in Appendix F to the Staff Report as well as Attachment B to the 30-Day Changes. These show that the manufacturer ZEV sales requirements are feasible for zero-emission technology. Because of the need for electrification and the feasibility of the requirements, staff is maintaining the current ZEV percentage requirements.

Manufacturer ZEV Sales – Rationale for Increasing Class 2b-3 and Pickup Requirements

Comment: Commenter states that they would like to understand the basis for sales targets increasing by 100%. In addition, commenter would like to understand the inclusion of Class 2b-3 pickups. [RP1-215]

Comment: Commenter states adding pickup trucks to the rule only adds complexity and potentially little value. [RP1-216]

Agency Response: No changes were made to the regulation in response to these comments. As detailed in Attachment B to the “Notice of Public Availability of Modified text and Availability of Additional Documents and Information” for the ACT regulation, released in April 28, 2020, for public comment, staff moved the requirements for Class 2b-3 vehicles forward one year without changing the start date and removed the pickup truck exemption. The inclusion of Class 2b-3 pickup trucks in 2024 is supported by new information in recent market announcements showing that a number of zero-emission pickup and additional van models will be commercially available from several manufacturers well before the 2024 model year. See further discussion of staff’s rationale for increasing manufacturer’s sales requirements for Class 2b-3 vehicles in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales – Increase Weight Class Modifier for Class 2b-3 Vehicles

Comment: Commenter recommends increasing the weight class modifier for Class 2b-3 to 1.0. [RP1-241]

Agency Response: In response to this comment and new information, the weight class modifier for Class 2b-3 vehicles was increased from 0.6 to 0.8. This change was necessary as there is a higher risk to manufacturers that produce vehicles in this category due to relatively high proportion of personal-use and small fleet purchasers of pickups and vans. The Weight Class Modifiers are designed to allow manufacturers flexibility in producing their products while maintaining overall emissions benefits. Heavier vehicles produce more emissions, and electrifying heavier vehicles provides more benefits. Increasing the weight class modifier to 1.0 for Class 2b-3 vehicles would put them on par with a Class 4-5 vehicle. This would overestimate the emissions of a Class 2b-3 vehicle and overstate the benefit of electrifying a Class 2b-3 vehicle. Keeping the 0.8 value correctly states the emissions of a Class 2b-3 vehicle.

Manufacturer ZEV Sales – Allow More Technologies and/or Fuel Options

Comment: Commenter suggests that the ACT regulation consider the “cyclone” engine, which uses renewable fuels, as an alternative option to meet zero-emissions standards. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-16]

Comment: Commenter states that there are a number of renewable low carbon fuels in the marketplace that are reducing emissions. Commenter suggests that we should let the market figure out the most appropriate technology; and asks why should CARB dictate a winner at this point? Commenter suggests allowing alternative fuels/technologies participate in the rule. [RP1-106]

Comment: Commenter states that air quality improvements could be better accomplished by including other fuel types in the rule. [RP1-260-Form-300]

Comment: Commenter recommends CARB develop a manufacturer rule that is technology neutral. Commenter believes this rule, and any future fleet rule, should set emissions targets and allow any technology to meet it instead of specifying that only electric and hydrogen vehicles can be used for compliance. [RP1-272]

Agency Response: No changes were made to the regulation in response to these comments. The ACT regulation requires manufacturers sell ZEVs as a percentage of annual truck and bus sales in California. A ZEV is defined in the regulation as, “an on-road vehicle with a drivetrain that produces zero exhaust emission of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes or conditions”. See staff discussion on how the ACT regulation has the primary purpose of expanding electrification in California, but is one of a suite of CARB efforts to reduce emissions from vehicles and fuels, in chapter “Comments Received During Original Proposal’s 45-Day Comment Period” section “Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels”.

Manufacturer ZEV Sales – Give Credit for Low NOx Engines

Comment: Commenter in reference to Section 1963(a), states that the ACT regulation should provide an incentive to build Low NOx RNG medium- and heavy-duty trucks. [RP1-106]

Comment: Commenter recommends that the rule include NZEV credits for vehicles with engines certified to the optional low NOx standard of 0.02g/hp-hr and that use renewable fuel. [RP1-206]

Comment: Commenter states the ACT regulation should include a partial credit for low NOx trucks (0.02 grams of nitrogen oxides per brake horsepower hour (g/bhp-hr)) and a range multiplier for long range trucks (Class 7 and 8 - minimum range of 300 to 400 miles) to incentivize the sale of long range near-zero and zero-emission trucks. [RP1-216]

Comment: Commenter recommends that the rule include NZEV credits for vehicles with engines certified to the optional low NOx standard of 0.02g/hp-hr and that use renewable fuel. Additionally, the commenter is concerned that the, “definition of NZEV in the proposed rule focuses on certain technologies instead of actual emissions performance or capability.” [RP1-218]

Comment: Commenter recommends amending the regulation to incentivize the deployment of low NOx trucks powered by RNG to provide immediate air quality benefits. [RP1-254]

Comment: Commenter recommends developing a credit system, much like the one proposed by CARB staff for hybrid-electric platforms, for heavy-duty trucks that meet a 0.02 g/bhp-hr NOx certification standard or better. Additionally, the commenter states the ACT regulation needs to focus on existing technologies such as Low NOx engines now and push later for new technologies in order to reduce air pollution sooner than 8 years. Commenter states staff’s current proposal ignores the long-term benefits of using Low NOx trucks powered by renewable natural gas. [RP1-228]

Comment: Commenter states CARB should consider a backup strategy in the event of missing ZEV targets. The Low NOx, RNG powered trucks are able to hit the market soon while manufacturers work on producing ZEVs. [RP1-232]

Comment: Commenter states there should be a credit system for Low NOx trucks powered by RNG. [RP1-233]

Comment: Commenter states that it is unclear from CARB’s analysis whether the shorter-term air quality goals could be met utilizing currently existing low and ultra-low NOx technologies in a much more cost-effective manner than the approach currently proposed by CARB. [RP1-272]

Comment: Commenter recommends allowing electric hybrids, including non-plug-in hybrid-electrics that meet or exceed MY2027 Phase 2 GHG standards, to receive partial

credit in truck sectors facing challenges to fully electrify. Commenter cites China's related approach in LDVs, and provides a link to an article that also supports their position. Commenter suggests adding a compliance pathway to comply with the ACT regulation that allows for low-carbon fuel use in trucks such as ultra-low NOx trucks. [RP1-284]

Comment: Commenter urges CARB to continue to allow RNG/CNG to be one of the preferred options in the ACT regulation as a bridge to future technologies. [RP1-320]

Agency Response: No changes were made to the regulation in response to these comments. To the extent commenter in RP1-218 is asserting that the NZEV definition sets a prescriptive standard, CARB disagrees. The ACT regulation establishes a compliance option that provides partial credits to manufacturers that elect to produce and sell vehicles that do not meet the full criteria for a ZEV but that can operate for a specified mileage range - a minimum all-electric range (AER)) - without generating GHG or criteria emissions. Vehicles meeting this criterion are referred to as near-zero emission vehicles (NZEVs). The ACT regulation does not require manufacturers to sell NZEVs, but instead permits manufacturers that elect to sell NZEVs to do so as an interim partial compliance option to the primary regulatory requirement to earn ZEV credits in order to offset their deficits. It is a partial compliance option because manufacturers can use NZEV sales to meet no more than half of their deficits and no NZEV credits can be earned after the 2035 model year. Thus, the NZEV credit partial compliance provision does not constitute a prescriptive standard because it is purely optional and not a requirement mandated under the regulation. See discussion about credits for Low NOx vehicles in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels".

For the sake of clarity, commenter RP1-228's claims must also be put in the correct context. The commenter essentially alleges that its own analysis suggests that the ACT rulemaking will not achieve enough near-term NOx and carbon intensity emission benefits, relative to the existing emissions inventory, for SIP purposes unless CARB allows for manufacturers to generate NZEV credits with Low NOx engines. First, the discussion of "emission benefits" or "emissions inventory" or "emissions analysis" in the ACT rulemaking context is more related to an evaluation of how well the proposed regulations achieve the objectives of the ACT regulation than it is to any consideration of environmental impacts. (See 40 C.F.R. § 1066.605 [requirements for emissions testing not related to CEQA requirements].) In other contexts, like in environmental review situations (e.g., CEQA), these terms might point to air quality impacts or greenhouse gas (GHG) impacts. But, unless specifically incorporated into the environmental analysis of an environmental review document under CEQA, discussions of these terms in the ISOR, FSOR, or other record documents should not be taken to implicate an environmental review analysis of air quality or GHG impacts. Here, the commenter is asserting that its suggested concept of including Low NOx engine to

generate NZEV credits will be an emissions benefit for SIP purposes to meet the state's air quality goals under the Clean Air Act. This is not a comment about environmental impacts. Rather, the commenter disagrees with CARB's policy approach. The comment is noted.

Second, the commenter RP1-228's assertion that air quality improvements, relative to the baseline scenario, would be better accomplished through the use of Low NOx engines also deserves clarification. The use of the word "baseline" has a different meaning in the CEQA context than in discussions of non-CEQA issues. For example, ISOR's Appendix F (Emissions Inventory Methods and Results) provides analysis of the proposed ACT regulation on criteria and GHG emissions by estimating emissions under a "Baseline scenario" and a "Proposed Rule scenario." According to Appendix F, the "Baseline scenario represents the existing forecasted emissions inventory without the proposed ACT rule," and this forecasted inventory includes the same vehicle sales and population growth assumptions reflected in CARB's EMFAC (Emission Factor model) emissions inventory for weight Class 2b and greater vehicles for all fuel types. In other words, in the FSOR (Appendix F), the economic and emissions benefits of the ACT Regulation were evaluated against the business-as-usual (BAU) "baseline scenario" for each year of the analysis period from 2020 to 2040. In contrast, the baseline used for CEQA purposes in the EA is "a 2018 baseline, as that is the year in which CARB filed the notice of preparation" (NOP). Per CEQA requirements, the CEQA baseline corresponds with what is known as the existing conditions on the ground (including the regulatory setting and physical conditions in 2018) at the time of the filing of the NOP. (Title 14, California Code of Regulations, section 15125, subd. (a)(1).) Although the discussion of environmental impacts in the EA references the BAU scenario, the EA uses the existing conditions as the point for comparison when evaluating reasonably foreseeable changes that could result from deploying the required number of ZEVs required by the ACT regulation. As such, the CEQA baseline (see Attachment A to Final EA) serves a different purpose and has a different meaning from the "BAU baseline scenario" in Appendix F. For purposes of evaluating these comments, CARB interprets commenter's position as relying on existing forecasted emissions to suggest that its proposed Low NOx credit approach would achieve more emissions reductions below the forecasted emissions than the proposed ACT regulation. There is no suggestion in this comment that the proposed ACT regulation is actually causing an environmental impact, rather, it argues that the proposed ACT regulation could do more to reduce emissions below the forecasted emissions inventory if it adopted commenter's concept. CARB disagrees with commenters' argument on this point based on the reasoning already provided, above, in rejecting Alternative 3.

Manufacturer ZEV Sales – Modify Near-Zero-Emission Vehicle Definition

Comment: Commenter in reference to Section 1963(c)(16) suggests that the NZEVs definition should include the cleanest certified NOx vehicles in California. [RP1-106]

Comment: Commenter states that CARB should include heavy-duty trucks that meet a 0.02-gram NOx standard within the ACT regulation definition of near-zero. Commenter states that they support the Coalition of Natural Gas comment from May 28, 2020 of which they are also a signatory. [RP1-194]

Comment: Commenter suggests that the NZEV definition should define applicable technology in terms of quantifiable exhaust emission standards, to include engines emitting less than 0.02 g/bhp-hr NOx. [RP1-206]

Comment: Commenter states the definition of "near-zero" in the Staff Report is not consistent with many CARB, California Energy Commission, and South Coast Air Quality Management District documents. For example, the SCAQMD Air Quality Management Plan, which was approved by CARB, goes as far as explicitly defining "near-zero" as 0.02 g/bhp-hr, consistent with CARB's 90 percent reduction target. Commenter suggests that CARB set a performance-based definition for "near-zero" and continue to use the 90% reduction target and 0.02 g/bhp-hr emission rate. [RP1-216]

Comment: Commenter recommends modifying the NZEV definition to include additional technologies that can achieve the optional certification to 0.02g/hp-hr NOx standard and use renewable fuel. Commenter states that CARB should also clarify that the new definition of NZEV used in the ACT regulation does not affect the definition of "near-zero" as it is used in other CARB regulations or funding programs. [RP1-218]

Comment: Commenter states the definition of near-zero is a conflicting regulatory and statutory definition that is confusing to everyone. Commenter states PZEV is a vehicle that has the ability to operate partially in zero-emission mode. This would be a consistent definition to what is used in the light-duty vehicle sector, and should be used in the ACT regulation. Commenter states that the Low NOx 0.02 grams standard should be included in the near-zero definition. [RP1-228]

Comment: Commenter states that the near-zero term should include Low NOx trucks. [RP1-233]

Comment: Commenter states the definition of "near-zero" is conflicting with the commonly held "near-zero" definition and is confusing to stakeholders. Commenter recommends the inclusion of low NOx engines that meet the 0.02 g NOx value into the "near-zero" definition of the ACT regulation. [RP1-254]

Agency Response: No changes were made to the regulation in response to these comments. See staff's reasoning for maintaining the "near-zero-emission vehicle" definition in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Near-Zero-Emissions Vehicle Definition".

Manufacturer ZEV Sales – Add Midterm Reviews, Offramps, Market Reviews, or Appeals Process to Assess Regulation

Comment: Commenter requests that staff update their analysis of the current and future manufacturer marketplace and the medium- and heavy-duty ZEV models that will be available for purchase within the timelines of the ACT regulation. Commenter also states an update to CARB’s analysis of the current and future economic conditions that will affect availability of ZEV’s and sources of funding for government agencies should be completed. [RP1-44]

Comment: Commenter in reference to 1963.3 suggests that ACT does not provide alternatives to the strict requirements of the regulation e.g. an appeals process, technology determination, variance process, compliance provisions and suggests language similar to the Advanced Clean Transit regulation [sic]. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-106]

Comment: Commenter suggest that CARB should reevaluate the ACT regulation prior to 2035 to ensure that progress towards a zero-emission future does not stagnate at the required percentages. [RP1-140]

Comment: Commenter states that CARB should provide a provision in the rule to exempt manufacturers from mandated sales that exceed infrastructure build-out and purchase incentive availability. [RP1-214]

Comment: Commenter states that the ACT regulation should be reconsidered again in 3 years after it becomes law to accelerate the timeline. [RP1-223]

Comment: Commenter states that the ACT regulation should include regulatory provisions for relief if the market causes failure to meet the sales percentages. [RP1-241]

Comment: Commenter requests that CARB update their analysis of the current and future manufacturer marketplace and sources available for funding for fleet agencies at critical milestone dates in the proposed regulation. [RP1-255]

Comment: Commenter suggests it is appropriate for CARB to perform check-ins over the course of the rule’s implementation to ensure the rule remains on a path to success. [RP1-259]

Comment: Commenter states it would be highly prudent to build “checkpoints” into the regulation at specific milestones to assess the market, and to assess whether staff’s assumptions have borne out. [RP1-265]

Comment: Commenter recommends a future check-in regarding the market’s progress in meeting the regulation in 2026. [RP1-281]

Agency Response: No changes were made to the regulation in response to these comments. Staff intends to return to the Board with a recommendation in 2021 with a

complementary regulatory strategy on fleet owners to further the deployment of ZEVs. As a result, staff will continue to monitor the ZEV market and will be prepared, if needed, to make any adjustments at that time. Staff does not believe mid-term reviews or checkpoints are necessary, however, staff is prepared to come back to the Board once the regulation is in effect, if market conditions change. The Board provided a pathway to meet future ZEV goals, as described in the Board's final resolution, which will require, at minimum, full compliance with the approved regulation. For additional information, see response summarizing how off-ramps fail to add regulatory certainty in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Add Off-Ramps to the Proposal".

Manufacturer ZEV Sales - Elect ACC or ACT Credits Year Round

Comment: Commenter states that in Section 1963.2(a) staff should clarify that manufacturers have the flexibility to choose the program in which to generate credits throughout the year to prevent double counting between Advanced Clean Cars rule and ACT rule. [RP1-235]

Agency Response: No changes were made to the regulation in response to this comment. Manufacturers can claim credit in either program throughout the model year and are only required to report those credits once per year for the approved ACT regulation.

Manufacturer ZEV Sales – Extra Credit for ZEVs Based on Range

Comment: Commenter states that the current credit modifier value of 0.8 for Class 2b-3 vehicles does not provide incentives for OEMs to develop and produce vehicles to address the need of personal use buyers. OEMs can earn the same amount of credits by offering 150-mile ZEV vs. offering 300-mile ZEV. Toyota recommends adding "bonus" credit to the weight-class modifier in which OEMs are provided incentives to develop and provide longer range vehicles. From light-duty ZEV market assessments, Toyota is aware that one of the important factors for consumers is longer range availability. [RP1-80]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on why staff chose not to give longer ranged ZEVs more credit in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Extra Credit for ZEVs Based on Range".

Manufacturer ZEV Sales – Promote Hydrogen Fuel Cell Electric Vehicles and Associated Incentives

Comment: Commenter recommends a mechanism in the rule to incentivize production of hydrogen ZEVs starting in 2025 through 2035 in heavier GVWR ranges to help Caltrans meet its user range requirements, and/or an incentive program to develop heavy-duty electric vehicles and EV infrastructure that meets their range and needs. [RP1-273]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation categorizes hydrogen fuel cell electric vehicles as ZEVs and sets stringent requirements on manufacturers to produce ZEVs. To meet these stringent targets, staff expects manufacturers to work closely with their customers and design ZEVs that meet their customer's operational needs. Building hydrogen fuel cell electric vehicles with longer range capabilities is one solution for meeting the ZEV mandates. Regarding financial incentives, see discussion about incentives in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Out of Scope – Incentive and Funding Policies".

Manufacturer ZEV Sales – Clarify Changes to Low Volume Manufacturer Exemption

Comment: Commenter states that by striking out "Class 2b and greater vehicles" in the "Low Volume Manufacturer Exemption", it can be interpreted that many light-duty vehicle OEMs will be regulated under the Advance Clean Truck regulation even if they would be qualified as low volume manufacturers under the original description. CARB does not offer explanation as to why the "Class 2b and greater vehicles" description was struck from the modified proposal. Toyota requests reinstatement of "Class 2b and greater vehicles" into description of low volume exemption. [RP1-80]

Agency Response: No changes were made to the regulation in response to this comment. While the text "Class 2b and greater vehicles" was removed from the Low Volume Manufacturer Exemption section, the definition of "vehicle" explicitly states that vehicles must have a GVWR greater than 8,500 lb. The modified statement does not change the applicability of the exemption and only removes duplicative text.

Manufacturer ZEV Sales – Modify NZEV Credit Generation Past 2030

Comment: Commenter recommends modifying NZEV vehicle requirements; specifically, section 1963.2(b)(2) should be eliminated and section 1963.2(b)(1) should be revised to read as follows: "NZEV Factor Value. The NZEV factor used to calculate NZEV credits shall be calculated as 0.01 multiplied by the all-electric range, and is not to exceed 0.75 until the end of the 2029 model year and 0.65 starting with the 2030 model year." [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. The suggested change would effectively decrease the amount of credit longer range NZEVs would generate past 2030 and would maintain a minimum all-electric range of 35 miles. In contrast, the approved ACT regulation increases the minimum all-electric range requirement from 35 miles to 75 miles in 2030 MY. The commenter's proposed change would encourage the production of shorter-range ZEVs since there would be no requirement to produce ZEVs with at least 75 miles of range. In addition, the commenter's proposed change would dis-incentivize the production of longer-range ZEVs since vehicles with more than 65 miles of all-electric range would no longer receive additional credits.

In order to achieve zero-emission wherever feasible by 2045, manufacturers need to be building vehicles with sufficient zero-emission capabilities to meet all fleet needs. These proposed changes recommended by the commenter would not improve the likelihood of achieving this goal.

Manufacturer ZEV Sales – Use Battery Capacity instead of All-Electric Range for NZEVs

Comment: Commenter suggests that the ACT regulation should measure clean air value of a vehicle by its battery capacity in kWh as opposed to the self-claimed all-electric mile range. [RP1-140]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation requires the same test as the California Phase II GHG regulation that measures the all-electric range. The tested all-electric range is a useful metric that is representative of the miles travelled and vehicle efficiency. Because a range test is already required, an additional battery capacity test would place an unnecessary burden on manufacturers while providing no additional benefit.

Manufacturer ZEV Sales – Encourage Longer Range Plug-in Hybrids

Comment: Commenter states that regulations and incentives have not encouraged mid-range to long-range PHEV's and suggests that mid-range and long-range PHEV's, in combination with BEV's, is better in the near- and long-term than a scenario with only BEV's. [RP1-64]

Agency Response: No changes were made to the regulation in response to this comment. The approved regulation requires manufacturers produce ZEVs and provides credits for NZEVs that manufacturers can use to meet part of their compliance obligation.

Manufacturer ZEV Sales – Adjustments to NZEV Credits

Comment: Commenter requests the eligibility to generate credits for PHEV's (NZEV's) should be extended from 2035 to 2045 with a 75-mile AER and also extended past 2045 provided the PHEV has a 75-mile AER and is only capable of using or can be shown to use only an ultra-low carbon fuel for its secondary propulsion system [RP1-64]

Comment: Commenter requests capping the amount of credits in a class from PHEVs (NZEVs) be modified. Specifically, the proposed limit of 50% of class 2b-3 and class 4-8 straight truck credits from NZEVs should be increased to 75% especially in the years after 2030 when NZEVs must have a 75 mile AER. [RP1-64]

Comment: Commenter suggests the crediting system should encourage manufacturers to produce plug-in hybrid electric trucks that can provide more than 75% of their miles from an electric off-board power source through a new after-the-fact credit system based on proving that up to 95% of annual miles are all-electric. [RP1-64]

Comment: Commenter suggests revising the NZEV maximum allowance upward to as much as 70 percent from MYs 2024–2030 and tapered off in MYs 2031–2034 to hit 50 percent in MY 2035. [RP1-205]

Agency Response: Changes were made to the regulation to extend the NZEV credit generation sunset date from 2030 to 2035 for NZEVs that achieve more than 75 miles of all-electric range. This is directionally consistent with these comments. See discussion about staff’s reasoning for this extension in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Extend Sunset Date for Plug-in Hybrids”. No changes were made to the NZEV credit value nor the limitation of allowing only up to 50% of a manufacturer’s annual obligation to be met with NZEV credits. Staff set the NZEV credit value at a minimum, to meet the California’s GHG Phase II regulation’s minimum all-electric range, and tied the increase to a utility factor based on the vehicle’s all-electric range, maxing out at 75% of a full ZEV credit. This is to encourage manufacturers to produce full ZEVs while still allowing for development of NZEVs, considered to be a bridging technology, in cases where ZEVs may not fit in the 2024-2035 timeframe. ZEVs are the preferred technology option because they produce zero tailpipe emissions. The 50 percent NZEV maximum allowance is designed to allow significant production of NZEVs without deviating too significantly from the ZEV goals. Increasing the maximum NZEV allowance could potentially defer ZEVs from being deployed in California which runs counter to the regulation’s goals.

Manufacturer ZEV Sales – Do Not Allow PHEVs to Generate Credits

Comment: Commenter states the ACT regulation should be technology forcing, not just call for technology that is available today. CARB should require full electric vehicles rather than relying on near electric vehicles and credits. Credits should be phased out or eliminated altogether. [RP1-287]

Agency Response: No changes were made to the regulation in response to this comment. NZEVs are considered a bridging technology because they use an electric powertrain that is capable of some level of zero-emission miles. Therefore, their sales helps support the zero-emission supply chain, workforce development and are an option to achieve zero-emission operation in situations where ZEVs may not be suitable. In addition, the regulation does not award credits for NZEVs past 2035 to ensure that it is clear that ZEVs are the end goal for all market segments.

Manufacturer ZEV Sales - Credits Retirement Order Preferences NZEV Credits

Comment: Commenter states that in Section 1963.3(c)(2) the revised credit retirement order gives preference to NZEV credits over ZEV credits for different weight class groups, and that there should be no preferential treatment for NZEVs because it will lead to market distortions. Tesla states that modifying the expiration date for NZEV credits would be a more effective approach. [RP1-235]

Agency Response: No changes were made to the regulation in response to this comment. The credit retirement order was developed to simplify implementation. The order in which credits are retired is based on expected manufacturer preferences: older credits should be used before newer credits because they expire first, and NZEV credits should be used before ZEV credits because they are less fungible. Therefore, the retirement order states that oldest credits are used first, and NZEV credits are used before ZEV credits. This order represents how a manufacturer would use their credits if they had the option to do so and is not designed to incentivize NZEV credits.

Manufacturer ZEV Sales – Plug-in Hybrids Instead of Battery-Electric

Comment: Commenter states that PHEVs are a better option than one big battery BEV used for a truck because the energy used in a BEV could be redistributed to many smaller PHEV's resulting in longer life cycles. [RP1-18]

Agency Response: No changes were made to the regulation in response to this comment. Staff considers plug-in hybrids as a bridge technology. Please see the discussion about how the regulatory structure will encourage both full ZEVs and longer ranged NZEVs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Encourage Longer Range Plug-in Hybrids”.

Manufacturer ZEV Sales - Add Credit for Electrified Power Take Off

Comment: Commenter recommends that vehicles with approved ePTO systems are included in the definition of near-zero-emission vehicles and proposes a mechanism by which ePTO manufacturers could be designated as credit earners through rule language changes. [B2-24]

Comment: Commenter states that the regulation has been centered on applications which are primarily used for traveling vehicle miles and not for performing work functions. Commenter states that the rule should consider the emissions for vehicles across a range of use cases and urges CARB to evaluate the value of hybridization solutions not just for driving the vehicle, but also for electrifying the primary work function even if it is not conducted during the drive cycle using systems such as electrified power takeoff (ePTO). [RP1-32]

Agency Response: No changes were made to the regulation in response to these comments. See discussion on why awarding credit for electrified power take and similar technologies is unnecessary in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Add Credit for Electrified Power Take Off”.

Manufacturer ZEV Sales – Credit for Conventional Hybrids

Comment: Commenter asks if the ACT regulation could include hybrid engines that run on NG, diesel, jet fuel, or gasoline. [RP1-16]

Comment: Commenter recommends the ACT regulation should expand compliance pathways to include conventional heavy-duty hybrids (HEV) and recommends flexibility to the proposed credit system by providing partial credits for HEVs similar to PHEVs. [RP1-205]

Agency Response: No changes were made to the regulation in response to these comments. See staff reasoning for not crediting conventional hybrids in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Credit for Conventional Hybrids”. Awarding credit for conventional engines would be inconsistent with the goals of the regulation, regardless of the type of fuel used by the conventional hybrid vehicle. However, the regulation does include credit for NZEVs vehicles regardless of which combustion fuel source they use.

Manufacturer ZEV Sales – Extend Deficit Makeup Period to Three Years

Comment: Commenter recommends modifying the requirements to make up a deficit to require a manufacturer to make up a deficit within three model years, in alignment with the Heavy-Duty GHG rule. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on maintaining the current deficit makeup period in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Extend Deficit Makeup Period to Three Years”.

Manufacturer ZEV Sales - Allow Credit Transfer Between Categories

Comment: Commenter states that the rule should allow sufficient flexibility to sell more ZEVs in one category and fewer in another. [RP1-191]

Agency Response: No changes were made to the regulation in response to this comment. The regulation already allows manufacturers to transfer credits between weight categories and to use credits from selling ZEVs in one category to meet another category’s deficit obligations. The only exception is the Class 7-8 Tractor category, which has limited credit transfers from the other categories to ensure tractors are produced and sold into California. Class 7-8 ZE tractors are needed to meet the state’s ZE drayage goals.

Manufacturer ZEV Sales – Class 2b-3 Targets Hindered by Lower Fleet Rule Potential

Comment: Commenter is concerned achieving aggressive Class 2b-3 targets is at risk because fleet mandates will not capture small businesses/single owner operators and therefore a big part of 2b-3 market will not fall under fleet rules. [RP1-265]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that there are fewer large fleets in the Class 2b-3 population; however, some fleets such as government fleets and utilities are well suited

for electrification. In addition, staff anticipates manufacturers will sell vehicles to individuals and small fleets regardless of the presence of a fleet mandate. Despite this, staff will evaluate methods to accelerate fleet uptake across all vehicle classes in the upcoming ZE fleet rule.

Manufacturer ZEV Sales – Ban Internal Combustion Engines

Comment: Commenter suggests earlier ZEV sales requirement beginning in 2021, all new trucks should be electric by 2030, and to ban all non-electric trucks from entering CA by 2040. [RP1-10]

Comment: Commenter states the regulation should be strengthened by requiring the elimination of fossil fuel powered trucks before 2030. [RP1-12, RP1-36]

Comment: Commenter states that only electric trucks should be allowed to operate in CA and all other trucks can trans-ship goods at the border. [RP1-260-Form-1914]

Agency Response: No changes were made to the regulation in response to these comments. The Board directed staff, through the approved Resolution, to develop supporting policies and regulations to electrify all vehicles where feasible by 2045. However, due to the early nature of the market, some market segments appear challenging to electrify currently. For example, electrifying long-haul trucks will require an interstate infrastructure network. Other niche markets such as crane trucks, logging trucks, emergency vehicles, etc. also present unique challenges to electrification. For these reasons, staff is not proposing a combustion engine ban in this rulemaking but will assess the market as it develops. For more detailed discussion about why it would not be feasible to require more ZEVs than the approved regulation, see chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales – Cost Analysis Overestimates LCFS Adoption by Fleets

Comment: Commenter states that the proposed ACT regulation assumes significant Low Carbon Fuel Standard (LCFS) benefits to nearly all truck users, when it is completely unproven that operators will receive LCFS credits. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Staff disagrees with the notion that the LCFS regulation and the credit mechanism is unproven for fleet operators. The LCFS regulation has been in place for a decade and has been used by a wide range of fleets. The LCFS credit value is established by the market and is substantial.

The staff analysis is a representative of a likely scenario of ZEV deployments in California from 2020 to 2040 and intentionally does not include assumptions that are unlikely to occur. By 2035, staff estimates that about 15 percent of the trucks in operation would be ZEVs which is a relatively small fraction of the total fleet. The staff

assumptions reflect that fleets are not required to purchase ZEVs, and would make their purchase decisions primarily based on the total cost of ownership. Operators that could not benefit from the LCFS credits are simply less likely to purchase ZEVs than operators that could. For this reason, the staff analysis is representative of a likely ZEV deployment scenario and is appropriate as is. In addition, credits earned by a station owner can be passed on to a vehicle operator by reflecting it in the pump or station price as is currently done for renewable diesel and renewable natural gas.

Manufacturer ZEV Sales – Reduced Government Budgets’ Impact on Incentives not Analyzed

Comment: Commenter states that the ACT did not analyze the impacts of a statewide deficit in government budgets and the resulting impacts on availability of incentives. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. First, the staff analysis did include an analysis of the impacts on state and local governments resulting from the purchase of ZEVs instead of combustion vehicles. Second, the ACT regulation is not predicated on the availability of incentives. See the discussion about incentives in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Incentive and Funding Policies”.

Manufacturer ZEV Sales – Cost Burden to Consumers

Comment: Commenter asks how the ACT regulation will ensure that consumers are not burdened by costs from switching to zero-emission technology. [RP1-26]

Agency Response: No changes were made to the regulation in response to this comment. As part of the Standard Regulatory Impact Assessment (SRIA), appendix C of the Staff Report, staff performed an analysis on the costs to the state as a whole as well as costs to a typical fleet. The analysis reflects that ZEVs have higher upfront costs, and a lower total cost of ownership primarily from lower maintenance and fuel cost savings. ZE truck owners that own their charging or hydrogen fueling stations can further lower fuel costs by taking advantage of the Low Carbon Fuel Standard (LCFS) program. The ACT regulation is expected to result in a total cost saving of \$4.9 billion to truck transportation in California compared to Business as Usual from 2020 through 2040, mostly due to fuel cost savings. This estimate includes infrastructure cost, higher cost of the vehicles, maintenance and fuel savings, and cost savings due to the Low Carbon Fuel Standard. It does not include vehicle or infrastructure incentives. Thus, incentive programs such as the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Program (HVIP), utility investments, and other funding may be used to offset some potential upfront cost to consumers. Several hundred million dollars per year have become available recently, which would further increase savings to fleet owners.

Manufacturer ZEV Sales – CARB Does Not Have Authority to Require Zero-Emission Powertrain Certification

Comment: Commenter states that CARB does not have the authority to mandate the zero-emission powertrain certification warranty, defect reporting, and recall requirements for ZEVs. Commenter states none of the requirements contained in the ZEP Certification relate to engine or vehicle emission standards or in-use performance and are instead consumer-protection requirements which is beyond CARB's authority. Based on definitions in the Health and Safety Code, commenter states that CARB's certification authority extends to powertrain components that have no authority to discharge emissions into the air. Commenter states, similarly, CARB does not have the authority to require warranty and recall for ZEVs nor defect and recall requirements as the Health and Safety Code are specific to tailpipe emission and related emissions standards.

Commenter states CARB's response to EMA's comments in the ZEP Certification rulemaking does not consist of a response at all. As a result, commenter states the ZEP Certification requirement remains invalid and unlawful. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. CARB adopted the Zero-Emission Powertrain Certification regulation on June 27, 2019, and parts of this comment are directed at CARB's authority to adopt certification, warranty, defect reporting and recall requirements as part of that rulemaking action. Notwithstanding that fact, CARB provides the following response to the comment.

CARB disagrees with the commenters' assertion that it does not have authority to adopt certification, warranty, defect reporting and recall requirements as part of this rulemaking action. CARB is authorized to adopt standards, rules and regulations, and to perform such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law (California Health and Safety Code (H&SC) sections 39600 and 39601). H&SC sections 39002 and 39003 place the responsibility for controlling air pollution from motor vehicles on CARB. Additionally, H&SC section 38560 directs CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources, including mobile sources. The growth and successful adoption of heavy-duty ZEVs, which will lead to reductions in mobile source emissions, is critical to California meeting its air quality standards and GHG reduction goals. The regulation furthers those reduction goals.

A "motor vehicle" is defined in H&SC section 39039 (referencing California Vehicle Code (CVC) section 415) as a vehicle that is self-propelled. A "new motor vehicle" means a motor vehicle, the equitable or legal title to which has never been transferred to the ultimate purchaser (H&SC 39042) and a "new motor vehicle engine" means a new engine in a motor vehicle (H&SC 49042.5). Clearly, a new heavy-duty battery-

electric or fuel-cell vehicle and its engine, (which comprises a primary part of the powertrain), fall within these definitions. New motor vehicles and engines may not be imported, delivered, purchased, rented, leased, acquired, offered for sale, sold, or registered for use in California unless they have first been certified by CARB. Thus, a heavy-duty battery-electric or fuel-cell vehicle, like a heavy-duty internal combustion engine vehicle, must be certified by CARB. Certification includes setting emission standards (H&SC 43101) and test procedures (H&SC 43104) and necessary ancillary requirements such as warranty and recall (see H&SC sections 39600, 39601, 43205.5, 43214, 43106, and 43105). These provisions broadly apply to all new vehicles and engines – there are no exemptions for battery-electric or fuel-cell vehicles and their powertrains. Furthermore, EMA misconstrues the nature of this rulemaking action, as it does establish emission standards and other emission related requirements for heavy-duty battery-electric and fuel cell vehicles and their powertrains. In 2004, the U.S. Supreme Court clarified that the definition of “standard” as it applies to emissions from motor vehicles and motor vehicle engines under Title II of the federal CAA, relates to the emission characteristics of vehicles or engines and includes not only traditional emissions limits for specified pollutants (e.g., 0.4 grams of oxides of nitrogen per mile), but also requirements that vehicles and engines be equipped with certain types of pollution-control devices, or incorporate design features related to the control of emissions. *Engine Mfrs. Ass'n v. S. Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 253, 124 S. Ct. (2004). The regulation does not primarily comprise a consumer protection regulation – rather, it establishes requirements intended to ensure the introduction of zero-emitting heavy-duty vehicles into California.

HD ZEV failure or lack of support (and resulting downtime) is expected to result in higher usage of internal combustion vehicles and greater emissions. By reducing the number of failures and/or the amount of downtime caused by failures, the regulation will provide some level of protection to HD ZEV adopters and help ensure that the emission reductions attributed to the measures it aims to support will actually be achieved.

Manufacturer ZEV Sales – Allow More Credits to Transfer into Class 7-8 Tractor Group

Comment: Commenter recommends modifying the low tractor volume flexibility language and proposes the following: "Low Tractor Volume Flexibility. A manufacturer who has tractor deficits remaining after retiring credits per the credit retirement order in sections 1963.3(c)(1) and 1963.3(c)(2) can use Class 2b-3 or Class 4-8 group ZEV credits, starting with the earliest expiring credits, to satisfy up to 50 of their Class 7-8 tractor group deficits." [RP1-218]

Comment: Commenter suggests CARB adopt a strategy to cap credit movement into the tractor category at 90% in 2024 and decrease over time such that in model year 2031 the manufacturer would be required to sell their full tractor ZEV requirement. [RP1-214]

Agency Response: See discussion regarding changes staff made to allow credit transfer into the tractor category, and why the amount of credits allowed to transfer were limited to balance the need to ensure Class 7-8 ZE tractor production while providing manufacturers flexibility in complying with the rule, found in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Allow Credit Transfer into Class 7-8 Tractor Group”.

Manufacturer ZEV Sales – Set Performance Metrics for Zero-Emission Technologies

Comment: Commenter states that ACT should include performance-based metrics to ensure continued progress and cost-effectiveness in zero-emission technology. Commenter supports providing performance-based metrics and goals for HD electric vehicles that encourage improving battery performance, account for emissions over the full lifecycle, and take into account range requirements and deterioration limitations that incentivize investment in the technology. [RP1-205]

Comment: Commenter supports revisiting ZEP requirements to establish performance-based metrics on electric trucks' batteries and components. Commenter states that this would drive continual improvement in electric truck component development and ensure the most cost-effective overall emission reductions and the most affordable trucks for California. Commenter states performance based metrics for electric vehicles could include battery performance and durability standards, such as lifecycle emission reduction goals, range requirements, and short- and long-term deterioration limits. [RP1-284]

Agency Response: No changes were made to the regulation in response to these comments. Using performance-based metrics in a regulation would create additional complexity and would be more challenging to develop and enforce. The approved regulation will ensure that manufacturers develop competitive ZEV products at price points that will meet fleet needs. This can be observed in the light-duty market where manufacturers are continuously releasing ZEVs with higher range, higher battery capacity, more battery density, and other improvements. For these reasons, setting performance-based targets for zero-emission vehicles is unnecessary at the current stage of the market.

Manufacturer ZEV Sales – Oppose Extending NZEV Crediting Past 2030

Comment: Commenter states that ACT should not extend the NZEV credit beyond 2030 because ZEVs will be fully accessible and commercialized by 2030. [RP1-140]

Agency Response: No changes were made to the regulation in response to this comment. See the rationale for extending the timeframe that NZEVs can earn credits in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Extend Sunset Date for Plug-in Hybrids”.

Manufacturer ZEV Sales – Penalty Calculation for Failure to Meet a Deficit

Comment: Commenter states that for Section 1963.5(a)(4) the penalty should be based on the manufacturers’ actual outstanding deficit rather than one half of their deficit. [RP1-235]

Agency Response: No changes were made to the regulation in response to this comment. Health and Safety Code section 43212 specifies that manufacturers who do not comply with emission standards are subject to a civil penalty of \$37,500 for each vehicle which does not comply with California standards. Section 1963.5(a)(5) specifies how to convert the size of a deficit into vehicle equivalents for the purpose of HSC 43212. Staff decided to divide the deficits in half for this conversion to ensure that the penalties are representative. For example, failing to produce a zero-emission Class 8 non-tractor would generate two deficits. Under staff’s current proposal, this would result in a penalty of \$37,500 per Class 8 ZEV not sold. Without dividing the deficits by two, this penalty would be \$75,000 per vehicle, double the statutory amount. The current formula encourages compliance while meeting statutory guidance on the penalty amount per vehicle.

Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks

Comment: Commenter expresses concern over the ability of Class 8 waste collection vehicles to go EV, due to their high consumption of energy from the collection and compaction work they do, and citing significant technological hurdles to be overcome. [RP1-320]

Agency Response: No changes were made to the regulation in response to this comment. See response outlining refuse truck electrification in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks”.

Manufacturer ZEV Sales – Proposal Not Backed by Data or Analysis

Comment: Commenter states CARB needs to conduct additional analysis to ensure accuracy in assumptions and appropriate goals in regulations. [RP1-320]

Agency Response: No changes were made to the regulation in response to this comment. See response detailing staff’s work developing and updating the assumptions used to support the regulation in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Proposal Not Backed by Data or Analysis”.

Manufacturer ZEV Sales – Clarification Regarding Medium-Duty Passenger Vehicles

Comment: Commenter states that the new ACT regulation does not define medium-duty passenger vehicles (MDPV), while the California Phase II GHG regulations do, and would like clarification on the categorization. Commenter’s understanding is that the

categorization of a truck for ACT purposes is independent of its categorization for GHG purposes and that a >8500 lb. GVWR MDPV could be part of a manufacturer's light duty fleet for GHG purposes, and, at the same time, be part of the manufacturer's MD/HD fleet for ZEV (ACT) purposes. [RP1-193]

Agency Response: No changes were made to the regulation in response to this comment. The scope of the ACT regulation includes vehicles above 8,500 lb. GVWR to be consistent with the scope of the Advanced Clean Cars ZEV regulation that includes vehicles with a GVWR at or below 8,500 lb. GVWR. This approach avoids any potential overlap where the same vehicle would be face requirements in both ZEV regulations. The ACT regulation uses GVWR for determining which vehicles fall into which categories and does not have a MDPV definition.

Manufacturer ZEV Sales – Use Existing Light-duty CRDTS Reporting System

Comment: Commenter states that for ACT reporting, CARB should use the existing Zero-Emission Vehicle (ZEV) Credit Reporting and Data Tracking System (CRDTS) because a central database provides a single information source that is aligned with CARB executive orders along with maintaining previous reporting and credit bank information [RP1-193]

Agency Response: No changes were made to the regulation in response to this comment. Staff intends to leverage existing CARB reporting systems where feasible to minimize the reporting burden for manufacturers, and will ensure that manufacturers have a system to report their information as required by the ACT regulation.

Manufacturer ZEV Sales – No Pay-to-Pollute Penalties

Comment: Commenter suggests that the ACT regulation restate that paying a penalty provision is just one step a manufacturer must take if ZEV credit shortfalls are not addressed in a timely manner. Commenter also suggests that the ACT regulation should further clarify the need to satisfy credit deficits even after a penalty is applied to avoid a “pay to play” assumption. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-208]

Comment: Commenter states that there needs to be clarification that paying a penalty does not satisfy the compliance obligation with credits. [RP1-235]

Agency Response: No changes were made to the regulation in response to these comments. A manufacturer that does not meet their deficit requirements would be subject to a penalty as specified in section 1963.5(a)(4) and would still need to fulfill their sales obligation to make up the deficit shortfall.

Manufacturer ZEV Sales – Interactions with the Low NOx Omnibus Rulemaking

Comment: Commenter states the overlap from the ACT regulation and Low NOx rules will create a market where traditional truck manufacturers will either reduce sales or abandon the market altogether in California. [RP1-218]

Comment: Commenter recommends emissions inventories and market analyses be considered for the ACT regulation and Low NOx Omnibus rules holistically. [RP1-284]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes that the ACT regulation and Low NOx Omnibus regulation will both affect heavy-duty manufacturers over the course of this decade. These regulations in combination will ensure that manufacturers are selling zero-emission vehicles wherever possible, and the cleanest combustion everywhere else.

In addition, because the ACT regulation was proposed and adopted before the Low NOx Omnibus, there is a limit to the amount of analysis that can be done in this rulemaking. The California Department of Finance requires that the impact of regulations be compared against a baseline scenario consisting of current conditions and enacted laws. Because the Low NOx Omnibus was not adopted at the time the regulatory documents for the ACT regulation were released, it would be inappropriate to include that proposed regulation as a part of the baseline for the ACT regulation analysis.

Manufacturer ZEV Sales – Heavy-Duty Trucks Not Suitable For Electrification

Comment: Commenter states that there are challenges with ZEV trucks in the heavy-duty group due to large capital costs, travel range, and charging times that are needed in emergency response and 24-hr operations [RP1-273]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about the market analysis for vocational vehicles in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Exempt Class 8 Vocational Vehicles”.

Manufacturer ZEV Sales – Hydrogen Better for Long Haul

Comment: Commenter states that electric trucks will not work for interstate movement but that hydrogen electric trucks will work. [RP1-05]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about the lack of technological barriers to building longer range battery-electric vehicles and the resulting tradeoffs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Analysis Does Not Include Long-Haul Trucks Used For Freight Movement”. Generally, hydrogen electric vehicles are better suited for long haul applications, but infrastructure, cost, and other barriers still exist that currently prevent widespread adoption.

Manufacturer ZEV Sales – Health Benefits will be Greater than Anticipated

Comment: Commenter states that the health benefits analysis is conservative because it does not factor in many pollutants and health endpoints due to limits in CARB’s health evaluations and quantifications, which were discussed with the Board at the April 23

hearing. Commenter believes the health benefits from the rule will surpass the estimated \$9 Billion in staff's analysis. [RP1-120]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that current health benefit analyses, though conservative, are based on the standard CARB accepted methodology. Efforts to keep the methodology up to date are on-going with the Research Division. CARB is committed to taking bold action to reduce pollution and protect the health of Californians, and will continue to update the health benefits associated with reducing harmful emissions.

Manufacturer ZEV Sales – Three-Legged Stool

Comment: Commenter states that the ACT regulation needs to be restructured by prioritizing the most suitable market segments, link any sales mandates to purchase requirements, focus on the needs of fleets to convert to ZEVs, and recognize the charging infrastructure needs. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion about staff's exploration into transitioning beachhead markets to zero-emission, as well as timing and other constraints preventing coupling of fleet and manufacturer requirements in this regulation, in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements". In addition, please see the discussion about the development of policy frameworks and assessments to support long-term infrastructure development plans by the California Public Utilities Commission and California Energy Commission in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Infrastructure Concerns".

Manufacturer ZEV Sales - Allow 5 Year Credit Life Starting from Ultimate Purchaser Placement in Service

Comment: Commenter states that the "ultimate purchaser" tracking requirement will create an unintended burden for CARB and its credit reporting mechanism given the proposed five-year expiration of credits. For example, in an ideal setting, 2024MY ZEVs are all sold by December 31, 2024, and OEMs can bank these credits as 2024MY credits by March 2025. Commenter states that if OEMs are unable to place-in-service their ZEVs by Dec 31, 2024, the credit reporting mechanism must allow the flexibility for OEMs to report 2024MY ZEVs to be reported in March 2026 or March 2027. Commenter states that there needs to be modification of the five-year expiration of credits rule that allows OEMs to be given five full years from the date the ZEV was placed-in-service vs. current model year designation. [RP1-80]

Agency Response: No changes were made to the regulation in response to this comment. Staff disagrees that there will be an unintended burden for CARB associated with the tracking requirement and the five-year expiration of credits. ZEV credits are

generated for each vehicle based on the manufacturer-designated model year, regardless of when the vehicle is placed in service. The reporting and recordkeeping apply to ZEVs produced and delivered for sale for each model year, beginning in 2021. If the OEM was unable to produce and deliver for sale a number of ZEVs by the end of the vehicles designated model year, the OEM would report those ZEVs at the end of the next model year. However, the five-year credit lifetime would still be based on the manufacturer-designated model year the credit was generated. The rationale for the credit lifetime is to ensure that credits earned in excess of the minimum requirements do not get banked indefinitely and undermine goals to maximize the use of ZEVs everywhere feasible if the ZEV market grows faster than the sales percentage require. The credit life period provides flexibility to manufacturers in introducing new ZEV models and in using banked credits to manage annual truck sales fluctuations.

Manufacturer ZEV Sales – Add Travel and Pooling Provisions for Section 177 States

Comment: Commenter states that the rule should provide additional compliance provisions for other states such as credit travel and pooling provisions. [RP1-218]

Comment: Commenter urges the Board to consider a modified travel provision that allows a calibrated level of credits earned in one state to be counted as earned in all ZEV states at a proportional value. Commenter recommends the ability to pool credits regionally because this will allow manufacturers to place vehicles into high demand areas with existing infrastructure without creating a compliance shortfall in other states. [RP1-326]

Agency Response: No changes were made to the regulation in response to these comments. These comments refer to two potential provisions, a travel provision and pooling provisions.

Ultimately, the Board decided not to include a travel or pooling provision in the ACT regulation but asked staff to work with other potential Section 177 states on this topic. CARB staff will work with our partner Section 177 states to determine if these, or comparable provisions, might enhance both California and Section 177 states' goals in ensuring the introduction and use of more heavy-duty ZEV vehicles in future rulemakings.

Manufacturer ZEV Sales – Clarify or Remove “Sold to Ultimate Purchaser”

Comment: Commenter states the need for clarification of the "Delivered for Sale" language because the deficit generation language, and credit language stating that credits are not earned until vehicles are delivered to the ultimate purchaser do not align with the “delivered for sale” intention or approach. This would impose burdens on OEMs to track vehicles through their final sale. Commenter requests that CARB strike text in the credits/deficits sections of the final rule, so it is clear that CARBs intent is to report ZEVs based on when they were delivered for sale. [RP1-193]

Comment: Commenter recommends modifying of the description of vehicles sold in California. EMA proposes modification of language in Section 1963.1(a) as follows: "Deficit Generation. Starting with the 2024 model year, a manufacturer shall annually incur deficits based on the manufacturer's annual sales volume of on-road vehicles produced and delivered for sale in California." [RP1-218]

Comment: Commenter states that the calculations based on "delivery to final purchaser" is problematic and is concerned that manufacturers have no means of controlling who the final recipient of the vehicle is, and are unclear on the necessity of diverging from standard industry practice to use point of final delivery into California. [RP1-265]

Agency Response: No changes were made to the regulation in response to these comments. The terms "produced and delivered for sale in California" and "sold to the ultimate purchaser in California" are used in the regulation to ensure ZEVs are placed and operated in California in order to ensure the air quality benefits occur in-state. Without this language, manufacturers that sell vehicles to entities based outside of California that are delivered out of state, but are ultimately placed in service in California, would not get credit for these vehicles. Additionally, this language helps ensure that ZEVs are not assigned credits until a vehicle is sold to a customer, rather than allowing credits to accrue by simply delivering it to a California dealer and placing it on the dealer's lot. Staff recognizes that manufacturers will likely need to develop methods to track and document final delivery to the ultimate purchaser.

Manufacturer ZEV Sales – Analysis Did Not Provide Alternatives to the Updated Proposal

Comment: Commenter states that the updated analysis for the proposed amendments only analyze the proposed changes against the original proposal, and does not present a range of options between the two and does not demonstrate why it has chosen one target over a range of others. [RP1-272]

Agency Response: No changes were made to the regulation in response to this comment. Staff developed the final requirements based on Board direction, including to align the regulation's ZEV requirements with major state goals such as 2045 carbon neutrality and 100 percent ZE drayage by 2035 and many public comments requesting more stringent requirements. Staff developed the percentage requirements based on meeting these goals and found these goals feasible based on the state of the technology and market as discussed in the ISOR and updated analyses as part of the 30 day modifications. The Staff Report also includes discussion of a number of alternative scenarios as required by the APA.

Manufacturer ZEV Sales – Non-IOU Utilities Lack Infrastructure Programs

Comment: Commenter states that many fleets will be supported with infrastructure by one of the three large investor-owned utilities, and is concerned that staff is de-emphasizing that approximately 20% of the state's load is served by municipal utilities

and these fleet customers may not have access to the IOU make-ready programs. [RP1-265]

Agency Response: No changes were made to the regulation in response to this comment. The approved regulation is a ZEV sales requirement for manufacturers and does not place ZEV purchase requirements on fleets. In addition, staff did not include any rebates or grant in the cost analysis and the results still show that overall, there will be a net economic savings. To the extent that incentives are used the net costs would be lower than staff assumed.

Manufacturer ZEV Sales - Infrastructure Challenges

Comment: Commenter states more hydrogen cars and stations are needed. [RP1-13-Form-60]

Comment: Commenter states that many government fleets are dependent on publicly available refueling infrastructure because they lack capital funding to install infrastructure, available real estate (or the capital funding to purchase that real estate) to install refueling infrastructure, and staffing to operate and manage refueling infrastructure. [RP1-44]

Comment: Commenter states that California should provide certainty for refueling infrastructure for ZEVs. [RP1-191]

Comment: Commenter states that the ACT regulation should encourage hydrogen mobility infrastructure, in addition to battery charging infrastructure. [RP1-205]

Comment: Commenter states that the electric supply in California is a concern because it is not ready for large scale roll out. [RP1-232]

Comment: Commenter states that the ACT regulation needs charging stations in convenient locations to be successful. [RP1-249]

Comment: Commenter notes that the ACT regulation will create significant growth in transportation-related electricity demand and associated needs for utility infrastructure upgrades, additional system-level planning, and customer-side charging infrastructure. Preliminary analysis conducted by SCE shows that the grid impacts and incremental work are within the scope of the utility's ability to manage. To ensure well-timed alignment of work that utilities need to do, utilities will need additional granularity, resolution, and accuracy related to where, when, and how fleets will electrify. Therefore, commenter states it is critical for the state agencies, utilities, fleet owners, and manufacturers to work collectively to reduce uncertainty for customers and address necessary infrastructure upgrades, and commenter urges CARB to help convene these stakeholders during implementation. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-259]

Comment: Commenter suggests close coordination with CARB's sister agencies to support implementation through significantly increased funding for charging infrastructure and enabling widespread infrastructure development. [RP1-265]

Comment: Commenter states that infrastructure is costly and their old facilities may not have space or capacity to support the electricity demand. Commenter also states Caltrans fleets are widely dispersed with 318 locations throughout CA, which hampers moving vehicles around to manage the utilization of ZEV assets. [RP1-273]

Comment: Commenter wants more collaboration among CARB, utilities, CEC, CPUC-- including informing CEC and CPUC of timelines needed to meet the regulation, and of the magnitude of electrification needs; and sharing between CARB and utilities of infrastructure process and needs. [RP1-281]

Agency Response: No changes were made to the regulation in response to these comments. See the discussion about infrastructure incentive programs from utilities and the State's long-term development strategies, as well as how the large entity reporting requirement will support infrastructure development in chapter "Written Comments Submitted During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Infrastructure Concerns".

Manufacturer ZEV Sales – Extend Comment Period Due to COVID-19

Comment: Commenter request an additional review and comment period of 90 days due to unanticipated staffing and financial impacts of COVID-19. [RP1-44, RP1-181]

Comment: Commenter states the deadlines should be extended due to the financial burdens from COVID-19. [RP1-233]

Agency Response: No changes were made to the regulation in response to these comments. In response to the challenges presented by the COVID-19 pandemic, staff increased the public comment period from 15 days to 30 days to review and submit comments related to the proposed changes being made to the ACT regulation. The impacts of COVID-19 were addressed by the Board at the hearing, and concluded that adequate additional time was provided.

Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks

Comment: Commenter states current range and weight limitations of heavy-duty electrified [refuse] vehicles would significantly increase the need for more vehicles, labor costs, and traffic on municipal streets. [RP1-320]

Agency Response: No changes were made to the regulation in response to this comment. See discussion around the lack of a mandate to produce refuse vehicles, staff's suitability analysis, and current market movements indicating refuse vehicles are suitable for electrification in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks".

Manufacturer ZEV Sales - Leakage Out-of-State

Comment: Commenter asks how the ACT regulation will address manufacturers that decide to move out-of-state. [RP1-26]

Agency Response: No changes were made to the regulation in response to this comment. A manufacturer may decide not to sell vehicles into California as a result of this or other regulations, and therefore would no longer be subject per the scope and applicability of the ACT regulation. Because ACT is not a fleet requirement, there is no reason fleets would decrease their purchases as a result of this regulation. Therefore, it is reasonable to conclude that the sales of the manufacturer who departed California will shift to other manufacturers who stay within the California market. This will result in the same number of ZEVs required but split between a different pool of manufacturers.

A growing body of studies, research, and reports indicates that the future of medium- and heavy-duty transportation will be powered by zero-emission technologies. If some manufacturers decide to leave the state, they will still need to develop zero-emission technology to stay competitive in the nationwide trucking market. Regulations such as ACT and policies such as the Memorandum of Understanding between 15 states and the District of Columbia show that the market is shifting towards zero-emissions. Manufacturers who leave the California market due to this zero-emission regulation may be left behind as less of the market will be served by combustion-powered technologies.

Manufacturer ZEV Sales - Reporting Timing

Comment: Commenter recommends CARB revise 17 CCR 1963.4 to include CARB acceptance of OEM information as an explicit step between OEM sales reporting and when OEM credit transfers can occur and recommends adjusting the timing of the credit acceptance and credit transfer steps to each have an additional 90 day window (e.g. CARB credit acceptance is completed no later than 180 days following the end of each model year, and credit transfers occur no later than 270 days following the end of each model year). [RP1-193]

Agency Response: No changes were made to the regulation in response to this comment. Credit transfers must be reported annually with sales information, and staff will adjust credit accounts to ensure accurate information is reflected regardless of when the information is sent. Manufacturers that carry forward a deficit have the flexibility to make up that deficit within one year which will allow credit transfers to occur and be reported for the purposes of making up a prior year's deficit carry-over.

Economic Analysis – General Cost Concerns

Comment: Commenter states that the CARB doesn't recognize that ZEVs will cost more for fleets to purchase and operate than traditional vehicles, and fleets must invest in charging infrastructures at their facilities. [RP1-218]

Comment: Commenter states that their members are concerned that CARB's cost model is premature. Commenter states that it is critical that the state and its businesses better understand proven charging strategies that result in a positive TCO. [RP1-244]

Comment: Commenter states this will put a financial burden on truckers. [RP1-260-Form-3526]

Agency Response: No changes were made to the regulation in response to these comments.

Staff's methodology to evaluate costs was to look at both the cost to the state as a whole and to look at the total cost of ownership for a vehicle. This method illustrates the costs to both California and a typical fleet. Through these analyses, staff found that while zero-emission vehicles will cost more upfront due to higher vehicle costs and additional infrastructure costs, but cost less over their lifetime due to lower fuel costs, LCFS revenue, and reduced maintenance expenses. ZEVs placed into well-suited applications will see a positive TCO versus their gasoline, diesel, and natural gas counterparts, and more applications will show a payback over time as ZEV costs decline. This is shown in numerous studies CARB's own analysis as well as studies and reports from ICF International, Lawrence Berkeley National Laboratory, the North American Council on Fuel Efficiency, Union of Concerned Scientists, University of California, Davis, University of California, Los Angeles, and others.

Staff held numerous workgroup meetings to discuss what cost assumptions to use and what applications to evaluate. Staff used the best available information to evaluate costs. While there are many unknowns regarding future costs, staff does not agree that is too premature to develop a cost model to inform the Board's decision.

Additionally, the regulation does not place a requirement on fleets to purchase ZEVs and does not believe it is meaningful to evaluate cost scenarios that are not likely to occur.

Lastly, while many electric vehicles appear to offer a positive total cost of ownership over the regulatory timeframe, the ACT regulation is not predicated on a positive total cost of ownership. Some of the main goals of the regulation include reducing criteria and greenhouse gas emissions and fostering the zero-emission medium- and heavy-duty market. Many of CARB's other regulations do not have a defined payback period but have been adopted as the benefits outweigh the costs.

Economic Analysis – Support for Specific Areas

Comment: Commenter's independent economic analysis aligns with CARB's in the following areas: Commenter states that their experience with Class 2b-3 and Class 4-5 EVs infrastructure, and charging costs largely align with the ACT Staff Report and the updated April analysis; Commenter projects that Class 3 electric delivery operations will be cost-neutral without incentive funding in the 2024 timelines targeted by this

regulation, inclusive of vehicles, chargers with infrastructure upgrades amortized over the lifetime of multiple trucks, and a managed overnight depot charging strategy, and; Commenter states that the positive TCO model developed by CARB matches the projections of fleet members with last-mile Class 7-8 operations and last-mile Class 3 operations under specific circumstances. The fleet positive TCO scenarios are dependent on the applicability of a) overnight, lower-kW, depot fueling and b) vehicle incremental costs in line with CARB's MY 2024 projections. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. Staff thanks the commenter for the supporting points.

Economic Analysis – Many Applications Operate Differently Than Modelled

Comment: Commenter states that with regional short-haul distribution of Class 7-8 tractor operations they do see potential opportunities for fleet electrification but only with clear caveats regarding vehicle cost, availability, grants, incentives, and ideal charging operations. Commenter states that the technological and operational needs of drayage, regional haul, vocational, food distribution, retail distribution, last mile, public fleet, and other types of medium- and heavy-duty truck applications vary tremendously, and as a result, present real-world challenges to zero-emission project implementation. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. In the cost analysis, staff modelled the costs for a typical vehicle, not a vehicle operating in best case or worst-case conditions. Staff recognizes the trucking industry is diverse and covers many unique applications, but because the point of the regulation is on manufacturers, staff does not foresee manufacturers will be targeting their product offerings to fleets poorly suited for electrification. Adoption will likely begin in relatively well-suited fleets first, and then expand over time as costs decline and fleet experience with the technology improves.

Economic Analysis – Analysis Did Not Include Gaps in Heavy-Duty Product Availability

Comment: Commenter states concern that gaps in heavy-duty EV product availability is not reflected in CARB's cost models. As CARB continues to refine their cost models and timelines, vocational fleets need a more nuanced approach that will account for the current market status and the time required to complete the engineering, integration, and total pricing activities required by the suppliers. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. In the fleet TCO analysis, three vehicles are modeled – a Class 3 passenger van, a Class 6 walk-in step van, and a Class 8 day-cab tractor used in regional operation. These three vehicles represent vehicle types that are commercially available or are in pre-commercial demonstrations. The TCO analysis was not intended to

analyze every vehicle use case but as a general analysis of these representative vehicles.

Staff anticipates due to the ACT regulation that manufacturers will begin to offer more electrified products over the course of the regulation to meet its increasingly stringent requirements. To ensure that fleets purchase these vehicles, manufacturers will need to ensure that they are offering these ZEVs at competitive prices.

In future ZE fleet rules, staff anticipates performing more granular analyses on specific use cases and body types to develop a better understanding of cost in regulated applications.

Economic Analysis – Vehicle Life Assumption is Too Long

Comment: Commenter states CARB made several inaccurate assumptions including assuming very long operating life when many fleets replace trucks after a short period of ownership. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Because the ACT regulation affects the state as a whole rather than any individual fleet, staff performed an analysis on a statewide level rather than looking at individual fleets. This leads to some key differences from a fleet-level analysis. No set vehicle life is used in the statewide cost analysis; instead, vehicles remain in the analysis until they leave the state fleet due to attrition or being sold out of state. If a fleet sells a truck to another fleet within California, from the statewide perspective nothing has changed.

Staff developed a separate TCO analysis to assess what the costs to a typical fleet would be if they purchased a ZEV. For this analysis, staff assumed the fleet would own the vehicle for 12 years. In reality, some fleets own their vehicles for a shorter period while others own the vehicle for its entire life. Twelve years was meant to be a representative value and has been used by other cost analyses. It is important to note that even if a vehicle is operated by one owner or multiple owners in the same period, the overall cost should remain the same over the period. However, the costs and fleets for each individual fleet will vary.

Economic Analysis – Recognizing the Importance of Service and Support Networks

Comment: Commenter states that up-front truck costs include elements of ongoing support and warranty coverage and that CARB must not underestimate the critical importance of after-sales support and service networks in the analysis. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes the importance of service and support networks to foster this emerging market. A key rationale for the rulemaking is to ensure large

manufacturers are developing zero-emission products and providing service and support to ensure these vehicles stay on the road. Staff's vehicle cost analysis included an additional 10 percent adjustment to reflect the "soft costs" associated with vehicle production including setting up service and support networks.

Economic Analysis – Analysis Does Not Include Long-Haul Trucks Used For Freight Movement

Comment: Commenter states there is a significant number of trucks that travel 350-500 miles per day moving freight throughout the state. Commenter questions why the analysis does not include these vehicles or if batteries exist that can meet these range needs. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. This comment is referring to Class 7-8 tractors that are primarily used for freight movement. While a large portion of these trucks are used for regional and long-haul trucking, this does not represent the entire segment. As stated in the Staff Report, numerous data sources such as the 2002 Vehicle Inventory and Use Survey and 2018 California Vehicle Inventory and Use Survey indicate that a large portion of tractors are used for shorter distance operations. Staff's assessment assumes that electrification in the tractor segment will start with shorter haul applications such as city delivery and drayage first, and then expand to other sectors including regional trucking. Note that ZEV tractors are expected to represent less than 15% of the tractor fleet by 2035 and is it not as likely that long-range ZEVs would be deployed unless the TCO is better than what staff assumed in the cost analysis.

There does not appear to be any technological limitations that would prevent manufacturers from building ZEVs that can meet these 350 to 500 mile range needs, but offering vehicles with such high range creates tradeoffs. Higher range will increase the needed battery capacity for a BEV which will both raise the vehicle's price and could decrease the usable payload of the vehicle. While these challenges will diminish over time as battery prices decline and battery capacity increases, they remain factors that fleets will remain aware of. Hydrogen fuel cell technologies are also a potentially viable ZEV option in these longer distance use cases.

Economic Analysis – Cost Analysis Underestimates Vehicle Cost

Comment: Commenter states concern that CARB's incremental cost of \$71,000 for a Class 7-8 EV tractor in 2024 may be an inappropriate cost to apply across all manufacturers. Commenter states that quotes received by members have been 3x to 5x current diesel tractor prices (which is in the low \$100K range). Commenter states there is concern about the reliability of the information underpinning the market adoption assumptions. Commenter states concern that a cost model based on preliminary estimates from emerging manufacturers will underestimate the true cost of the

incremental operations needed to support the large scale EV deployments industry wide. [RP1-244]

Comment: Commenter states CARB's current assumptions significantly underestimate vehicle costs by more than 300%. [RP1-320]

Agency Response: No changes were made to the regulation in response to these comments. Staff use the best available information in the economic analysis for the regulation and discussed data sources and assumptions with stakeholders in several workshops and work group meetings. Staff recognizes that ZEVs produced today have a significantly higher upfront cost versus their combustion-powered counterpart. Per Appendix H to the Staff Report, staff estimate that in 2018, a day cab tractor capable of 180 miles per day would cost nearly four times its diesel counterpart. However, due to projected battery cost reductions for heavy-duty vehicles and increased economies of scale, CARB forecasts that the cost of ZEVs will drop over the rest of the decade. This assessment matches the findings of other reports on heavy-duty electrification. While staff does not assume a ZEV will match the cost of a combustion-powered vehicle over the regulatory timeframe, decreasing vehicle costs will narrow the gap and make ZEVs an attractive option to fleets based on the total cost of ownership. CARB's findings on vehicle cost are in line with other studies referenced in the Staff Report that indicate declining vehicle costs.

Economic Analysis – Battery-Electric Truck Assumptions Do Not Meet Fleet Needs

Comment: Commenter states that the proposed ACT regulation includes battery-electric truck mileage ranges that will be unacceptable to truck customers – ranges that will be shortened further by the heavy loads and harsh operating conditions associated with commercial vehicles. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Staff based the range assumptions on the average daily mileage based on the EMFAC inventory. This is meant to represent a "typical" use case, not a best-case or worst-case scenario. Because fleets have no requirement to purchase ZEVs, there is no reason for manufacturers to target applications with long ranges or heavy loads unless they can offer a compelling product in that category. So, by using the "typical" use case, staff avoids using a scenario which may be too optimistic or too pessimistic in regards to ZEV adoption.

Economic Analysis – Light-Duty Battery Price Data Cannot Be Used for Heavy-Duty Vehicles

Comment: Commenter states that the proposed ACT regulation assumes low battery prices based on battery-electric passenger cars, when truck operating conditions and duty cycles will demand different technologies. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that heavy-duty vehicles currently have different challenges than light-duty vehicles. As a result, staff assumed heavy-duty battery prices will lag behind light-duty prices by five years. This reflects the smaller economies of scale, unique packaging requirements, enhanced durability requirements, and other factors. Other stakeholders have noted that this assumption leads to drastically higher battery prices than light-duty vehicles and the battery costs and vehicle costs used by staff are too high because in nearly all cases the battery cells used in trucks are the same as those used in cars and some trucks manufacturers are using complete battery packs from light duty cars in their battery electric trucks.

Economic Analysis – Incorrect Financing Terms

Comment: Commenter states that a typical truck loan is six years or longer with interest rates nearer seven percent, rather than the five years with 5 percent interest as staff assumed. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that different fleets will pay different amounts for financing. Generally, larger, well-capitalized fleets will achieve more favorable financing terms than small fleets or small businesses. Staff finds the five years, five percent interest rates appropriate as during the public process in developing cost estimates, numerous stakeholders stated such terms were typical and other assessments used similar values.

Economic Analysis – Total Cost of Ownership Analysis Did Not Include Federal Excise Tax

Comment: Commenter states that the TCO calculations did not include the Federal Excise Tax, a 12 percent tax on the sale of new Class 8 vehicles, is not accounted for. [RP1-265]

Agency Response: No changes were made to the regulation in response to this comment. As described in the Staff Report, staff assumed all Class 8 vehicles are subject to a 12 percent Federal Excise Tax.

Economic Analysis – Regulation Does Not Address Infrastructure Challenges

Comment: Commenter states that the proposed ACT regulation ignores the costs and complications of installing, maintaining, and expanding a charging infrastructure at fleet facilities, which the fleet may rent. [RP1-218]

Comment: Commenter states charging infrastructure that is needed would further burden governmental entities with unfunded capital projects. Commenter notes that current electric infrastructure costs are approximately three times that of already established CNG infrastructure. [RP1-320]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes the investments necessary for infrastructure and fully incorporated such costs into the statewide cost analysis in the Staff Report. Staff also notes that because this a manufacturer sales requirement, fleets who face cost barriers to installing infrastructure or fleets who rent vehicles have no requirement to purchase ZEVs. Manufacturers must identify which fleets can install infrastructure and develop competitive products for them to purchase.

Specifically, as part of the Staff Report's cost analysis, staff included the costs of chargers, site infrastructure upgrades, and charger maintenance in the analysis. Staff held multiple workgroup meetings to solicit feedback on the cost inputs and used the most up-to-date information wherever possible using real world experience and fleet data. Staff notes that because this is a manufacturer requirement, no fleet is required to purchase ZEVs unless they choose to do so. Fleets will purchase ZEVs if it makes financial sense for them to do so, including infrastructure costs and expenses. To the extent that some fleets rent their facilities or are unable to access capital for financing, they have no obligation to purchase ZEVs.

Economic Analysis – Regulation Will Increase Electricity Generation, Transmission, and Distribution Costs

Comment: Commenter states that California already has some of the highest electricity rates in the country and significant investments will be required in new generation, transmission, and distribution infrastructure. Commenter states that with so many parallel efforts requiring substantial investment it is hard to see how CARB's future electricity cost projections can be maintained at such low levels. CARB must carefully consider the impacts on future electric rates to end-user customers such as commercial electric truck fleet operators. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. As stated in the Staff Report, increased electricity usage from ZEVs provides an opportunity for a number of benefits to the utilities, their customers, and the overall grid itself. In a 2017 letter to CARB, the California Electric Transportation Coalition, a non-profit whose board of directors includes the major California utilities, outlined the benefits of transportation electrification to California's power grid. Electric vehicles are capable of shifting load to off-peak periods and increasing overall demand, both of which help create a more efficient, highly utilized grid. Studies have found that light-duty ZEVs provide a benefit to all utility customers as their electricity utilization drives down rates for all other ratepayers.

Economic Analysis – Diesel Fuel Cost Estimate Is Too High

Comment: Commenter states the cost analysis overestimates fuel costs as diesel costs \$3.25/gallon versus the \$4/gallon assumed. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. As described in the Staff Report, the cost analysis was based on the best information available to estimate costs over the analysis period from 2020 to 2040. Using today's diesel fuel price to represent costs out to 2040 is simplistic and is appropriate for a long-term analysis. Staff used the California Energy Commission's "Revised Transportation Energy Demand Forecast" to estimate fuel prices out to 2030, and the Energy Information Administration's "Annual Energy Outlook" to forecast prices from 2030 to 2040. These forecasts are independent projections that include the effects of regulations, legislation, and other factors that influence future prices.

Economic Analysis – Real-World Infrastructure Costs Differ from CARB Projections

Comment: Commenter states that real world fleet operations deviate from CARB's analysis that proposes electric truck charging takes place overnight in a depot with lower-kW, lower-cost EV chargers that can utilize low-cost off-peak charging rates. Commenter states that the reality is electric trucks incur significant incremental costs from expensive charging equipment, electrical service, and electrical rates. Commenter states that CARB's analysis that assumes 80kW chargers are suitable to sufficiently charge Class 7-8 tractors is inconsistent with their members experiences. Commenter states that universally 150kW chargers are being used to charge their members fleet of Class 7-8 EVs to support regional delivery operations.

Commenter states that CARB's analysis for the truck to charger ratio that assumes all Class 8 electric truck charging can take place using a ratio of one (1) EV charger for every one (1) electric truck, using individual 80kW chargers is an aggressive assumption given that their members are using 150kW chargers at a minimum to support their operations. Commenter states that member fleets are examining how to use one (1) charger to support two (2) or more electric trucks and that these efforts are adding new labor expense categories to manage the movement of trucks among the chargers, as well as the daily charger-truck communication and software challenges in an emerging technology space with multiple technologies. Commenter states that their members have been surprised by the ongoing networking and management costs required to operate their charging system. These additional annual costs have ranged from \$25,000-\$200,000 for a single site. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. First, the regulation is a manufacturer sales requirement and does not require any individual fleet to purchase ZEVs. The staff cost analysis is intended to be a representative scenario of ZEV deployment costs. The commenter implies that the staff analysis underestimates costs because the staff assumptions are not the same as an example referenced by the commenter. However, the commenter also explains that the project is looking to use a 150kW charger to support two or more trucks. A 150kW charger costs roughly twice that of an 80kW charger; thus, the cost of purchasing two 80kW chargers as staff assumed versus a single 150kW charger as described by the

commenter is essentially the same charger cost. Furthermore, if the 150kW charger is used to support two trucks, the charger cost of the example project would be about one half of that assumed in the staff analysis. The commenter also states that in the example project there is additional labor cost for an attendant to move the plug from one vehicle to another that was not included in the staff analysis. However, this example is not representative of the market in 2024 and beyond. Chargers already exist with two plugs that automatically start charging the second truck without an attendant. Therefore, these costs are not representative of the market during the regulatory analysis period.

Economic Analysis – Lack of Standardization for Electric Vehicle Chargers

Comment: Commenter states that there are no universally accepted standards for EV charging because the charging receptacles for each brand of truck are different. Commenter states that successfully scaling up commercial trucking to meet early regulatory targets requires increased standardization of EV charging to ensure that foundational investments in electrification continue to add value and do not require costly new hardware or infrastructure replacement as the market evolves. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. Staff acknowledges that there is no single charger that can meet all fleet charging needs currently. This is a challenge for BEV adoption as they increase the likelihood of stranded charging assets for the fleet or additional costs to modify the charging system if a new charging standard is developed. The large-scale deployment of BEVs will benefit from a common charging standard. However, through conversations with manufacturers, staff has determined that the marketplace appears to be heading in the direction of standardization. Most manufacturers appear to be using J1772 chargers for AC charging up to 19 kW, and J1772 CCS chargers for DC charging up to 350 kW. There is no standard currently in place for conductive charging above 350 kW, but a consortium of heavy-duty manufacturers, equipment providers, and charging networks is developing a charging standard for 1 MW or higher charging.

The Society of Automotive Engineering (SAE) is currently developing heavy-duty vehicle charging standards. CARB will be evaluating charging standards and can set requirements on charging standards if determined to be necessary.

Economic Analysis – Over-the-Road Trucking Has Significantly Higher Charging Costs

Comment: Commenter states that the CARB assumed electricity costs in the Staff Report are consistent with their analysis when overnight charging occurs. However over-the-road trucking operations are not regularly able to take advantage of the lowest cost off peak EV charging rates, where some fleets see 50% of their charging during peak hours. Commenter states that the cost of charging EVs is on average costs \$0.45/kWh, and with LCFS credit values included, the net cost of electricity to the fleet

operator is thus \$0.16/kWh to \$0.20/kWh, is above CARB's assumption. Commenter states that as the market matures and public access infrastructure becomes one of the strategies employed to charge electric trucks, it becomes much more difficult for the fleet end-user to capture the value of the LCFS credits. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. CARB recognizes that applications where vehicles are charging during peak times will face higher electricity costs than at other times. Because the ACT regulation does not require fleets to purchase ZEVs, there is no requirement that any fleet with high electricity costs would need to purchase ZEVs. This scenario is less likely since the total cost of ownership is less favorable than other scenarios. By 2035 about 15 percent of the fleet is expected to be ZEVs. For this reason, manufacturers will likely favor markets where fleets are able to charge overnight when electricity costs are the lowest. Over time, over-the-road trucking fleets may be able to incorporate ZEVs by purchasing vehicles with larger batteries that would not need to be charged during peak periods or by planning their charging sessions so that they occur during off-peak times in the middle of the day or during the night when electricity is cheapest.

Economic Analysis – Demand Charges Are Costly

Comment: Commenter states that demand charges are a significant concern for fleets. Some utilities like SCE offer a demand charge waiver, but when the waiver expires in a few years, it is estimated that the charging cost will increase from an average of \$0.15/kWh to \$0.50/kWh (more than a 300% increase). Commenter states that most EV operations fall outside of the service territories which may offer special EV rate programs. [RP1-244]

Agency Response: No changes were made to the regulation in response to this comment. CARB's cost analysis fully included demand charges and did not include short-term demand waivers in the analysis. Electricity costs were estimated by using the Charging Cost Calculator by utility as described in the Staff Report and is a tool that individuals can use to understand electricity costs with different assumptions. The \$0.50 per kWh estimate is simply not representative of any likely charging scenario. Furthermore, demand charges can be mitigated by ensuring chargers are highly utilized, spreading charging sessions over a longer time period, and using charging management software to stagger charging sessions.

At this point, all three major IOU's have proposed new electricity rate schedules specifically for commercial electric vehicles and two have already been approved by the CPUC. These utilities service the vast majority of California's fleets. Two of these rate schedules, by PG&E and SDG&E, have removed demand charges and replaced them with subscription charges which offer more flexibility and assurance to fleets. Staff anticipates smaller IOUs and POU's will analyze the impacts of these new rates and design their own rates to enable low cost charging for commercial fleets.

Economic Analysis – Cost Analysis Underestimated Combustion-Powered Fuel Efficiency

Comment: Commenter states that the proposed ACT regulation assumes very low fuel efficiency for traditional diesel-fueled vehicles, artificially making battery-electric vehicles compare better. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Staff disagrees with the commenter's assertion. The staff analysis and assumptions are described in detail in the Staff Report. Fuel efficiency values for conventional vehicles are from the EMFAC model and reflect significant fuel efficiency improvements expected as a result of federal and California regulations.

Economic Analysis – Battery-Electric Efficiency Improvements Are Overstated

Comment: Commenter states that the proposed ACT regulation inaccurately assumes that battery-electric powertrains will become significantly more efficient over a short period of time. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. As described in the Staff Report, staff assumed that the efficiency of battery-electric and fuel-cell electric vehicles would improve at the same pace as gasoline and diesel vehicles, an increase of roughly 20 percent by 2027.

It is unclear why the commenter claims CARB is inaccurately assuming ZEVs will become more efficient when these improvements are already required for the combustion-powered fleet. Battery electric and fuel cell electric technologies are less developed for heavy-duty applications compared to existing combustion technology, so there is more "room" to improve for these zero-emission technologies. Given this, CARB's assumption that these two technologies will advance at the same pace as conventional technology is likely overly conservative and underestimates further technology improvements.

Economic Analysis – Higher Maintenance Costs for Electric Vehicles

Comment: Commenter states cost per mile for the maintenance of electrified fleets to date have shown to be higher than that for a comparable RNG fleet. [RP1-320]

Agency Response: No changes were made to the regulation in response to this comment. Based on in-use data from light-duty and transit fleets, battery-electric vehicles have a lower maintenance cost per mile compared to their gasoline, diesel, or natural gas-powered counterparts. A battery-electric vehicle has fewer moving parts than a diesel vehicle and does not need many routine maintenance items such as oil changes. In addition, regenerative braking reduces wear on brakes which reduces the number of costly brake replacements/repairs. All studies staff have reviewed to date, and the experiences with light-duty ZEVs, corroborate the reduction in maintenance costs. For these reasons, staff maintains its current assumption that battery-electric

vehicles have lower maintenance costs than gasoline or diesel-powered vehicles over their lifetime.

Economic Analysis – Diesel Engine Rebuild

Comment: Commenter states a diesel engine lasts for a million miles with no need for a rebuild as staff assumed. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. Staff’s analysis in the Staff Report found that Class 8 engines required a rebuild typically near 850,000 miles while engines in lighter weight classes required rebuilds sooner. Based on the expected mileage accrual rate, the only engines that require rebuilds in the analysis timeframe (2024-2040) are Class 4-5 engines who have the shortest useful life. Class 6-8 vocational vehicles are more durable and would not require an engine rebuild in the first 16 years of operation.

Economic Analysis – Underestimated Battery-Electric Vehicle Residual Value Penalty

Comment: Commenter states that the proposed ACT regulation underestimates the negative impacts of low battery-electric truck residual values when residual value is critical to a fleet’s purchasing decision. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. To provide context, see response detailing staff’s methodology in determining vehicle life for the statewide cost analysis and the vehicle TCO analysis in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Vehicle Life Assumption is Too Long”.

Economic Analysis – Class 2b-3 Battery Life Assumptions Too Long

Comment: Commenter states that the proposed ACT regulation predicts very long battery replacement cycles, even no replacements over an assumed 26-year life of Class 2b-3 vehicles, when truck operation and charging characteristics will accelerate battery degradation. [RP1-218]

Agency Response: No changes were made to the regulation in response to this comment. Staff assumed battery-electric vehicles would need a battery replacement after 300,000 miles based on data from transit buses and light-duty vehicles with cooling systems. This means that high-mileage vehicles such as Class 8 tractors would need a battery replacement numerous times while low-mileage vehicles may not need a battery replacement. Class 2b-3 vehicles have fairly low annual mileage and are not anticipated to exceed 300,000 miles over the regulatory analysis, so no battery replacement was assumed.

Also note: CARBs economic analysis covers 2024 through 2040, therefore the longest assumption period possible is 16 years, not the 26 years the commenter claims.

Economic Analysis – Fleet Infrastructure Resilience

Comment: Commenter states that many of their member counties are subject to Public Safety Power Shut-Offs and requirements for ZEV vehicles would create an inability to charge municipal vehicle for multiple days and would incapacitate vital and emergency services during these times. [RP1-34]

Comment: Commenter states staff's analysis does not include the backup generators for charging stations. These will become necessary as wildfires cause public safety power shutoffs. Commenter also incorporates comments from the Rural County Representatives of California as reference. [RP1-169]

Comment: Commenter suggests that ACT include a natural disaster reliance assessment to assess natural disaster impacts on ZEV technology. [RP1-206]

Comment: Commenter states ZEVs provide no viable back-up plan during outages and or natural disasters. [RP1-320]

Agency Response: No changes were made to the regulation in response to these comments. Grid resiliency is an evolving issue that is outside of CARB's typical scope of operations. Our sister agencies including the CPUC and CEC are evaluating resiliency and what actions need to be taken to support the grid as directed by SB 350 and other related legislation.

The CPUC has released their draft Transportation Electrification Framework which is designed to offer a holistic strategy for addressing how the state's IOUs will support California's clean transportation and climate goals. This draft framework explicitly identifies resiliency as a focus for the utilities and discusses vehicle to grid integration, micro grids, backup generation by diesel or fuel cell generators, and other solutions. The CPUC is currently soliciting stakeholder input and intends to finalize the Transportation Electrification Framework after incorporating this feedback. In addition, the CPUC has started a rulemaking process regarding microgrids and resilience as directed by SB 1339. The CPUC has released its initial decision as of June 2020 and has issued the scoping memo for the next steps of this rulemaking. This work on microgrids will bolster resiliency and help support vehicle applications which rely on the grid. Lastly, as part of San Diego Gas & Electric's SB350 program, the CPUC approved a V2G pilot using buses to evaluate how these vehicles can provide energy to the grid and potentially boost resilience.

The CEC has recently held a workshop discussing energy resilience and ZEVs. This July 2020 workshop invited several speakers to present on their view on resilience. Some speakers including Envision Solar, FreeWire, and Toyota, where different technology solutions were highlighted including mobile chargers, chargers with battery storage and solar capability, and mobile hydrogen refuelers. Others highlighted the opportunities that vehicle grid integration and bidirectional charging can offer, with the California Transit Association stating that an integrated solution of solar, energy

storage, and electric buses can provide resiliency while significantly reducing energy costs. A different presenter from Blue Lake Rancheria showed how they were able to use ZEVs to support their microgrid during the recent power shutoff events through bidirectional charging. Others pointed out that ZEVs can be more resilient than other vehicles, and in some situations with vehicle grid integration, can support the grid during potential power shutoff events. The presenter Next-Dimension highlighted that ZEVs can be a solution to the state's challenges, but doing so will require coordination from state agencies, vehicle manufacturers, emergency responders, and utilities.

Operational concerns associated with power shutoffs is only an issue for extended outages and becomes an issue for all vehicle and fuel types. This issue is highlighted in a 2019 NREL presentation– natural gas stations need electricity to run compressors to move the gas along pipelines and to compress gas to fuel CNG vehicles, and gasoline and diesel stations cannot pump fuel without electricity.

ZEVs have their own trade-offs and benefits but are not the only fuel that faces resiliency issues. Fleets will make their own decisions on how and whether they will plan to have backup measures such as on-site energy storage, backup generators or have larger storage systems onboard the vehicle. Fleets who are not located in areas subject to power shutoff events will not need any measures to improve resiliency. Fleets that operate within these regions will need to evaluate the cost tradeoff of installing storage versus not operating some vehicles on days where the power is shutoff for long periods of time. Because the ACT regulation does not require fleets to purchase ZEVs, only fleets who are comfortable with their resiliency situation would likely purchase ZEVs.

As stated in the Staff Report, increased electricity usage from ZEVs provides an opportunity for a number of benefits to the utilities, their customers, and the overall grid itself. In a 2017 letter to CARB, the California Electric Transportation Coalition, a non-profit whose board of directors is composed of the major California utilities, outlined the benefits of transportation electrification to California's power grid. Electric vehicles are capable of shifting load to off-peak periods and increasing overall demand, both of which help create a more efficient, highly utilized grid. Studies have found that light-duty ZEVs provide a benefit to all utility customers as their electricity utilization drives down rates for all other ratepayers.

Economic Analysis – No Assessment Supports Tractor TCO Findings

Comment: Commenter states that a different set of assumptions in the comparison cost of Class 8 diesel truck tractor will be far more favorable when compared to an all-electric Class 8 truck tractor and states that there is no “financial” analysis to display the capital and annual costs through the “eyes of the fleet owner”. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. As stated in Attachment C to the Notice of 30-Day Changes, numerous

studies assessing the TCO of zero-emission tractors have been released. While they differ in their assumptions on vehicle capabilities and duty cycles, they show a common message – while zero-emission tractors are anticipated to have a higher upfront cost, their lower operating costs mean that fleets will see a positive TCO by the time the rule begins in 2024. While it is possible to create assumptions that would show ZE tractors as being less favorable, staff’s analysis represents a typical case rather than a best-case or worst-case scenario and is appropriate for a manufacturer requirement.

Economic Analysis - Ignores CNG Investments and Impacts from Stranding Those Investments

Comment: Commenter states that the ACT analysis did not take into account the billions of dollars spent on CNG fueling infrastructure, facility maintenance, and training. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. To the extent that the comment casts doubt on the validity or comprehensiveness of the economic analysis of the regulation, CARB disagrees with that assertion. As part of staff’s regulatory development, staff performed a macroeconomic analysis assessing the impact of the regulation on the state’s overall economy. This analysis found that the ACT regulation is anticipated to have a negative impact on the state’s oil and gas extraction industries as well as related businesses. This negative impact is offset by positive impacts in infrastructure installation, ZEV manufacturing, and other benefits to the state’s economy. Broadly, the ACT regulation is anticipated to have a neutral or positive impact on the state’s overall economy in spite of potentially negative effects on industries related to oil and gas extraction.

Staff notes that because this is a manufacturer requirement, no fleet is required to purchase ZEVs unless they choose to do so. Fleets will purchase ZEVs if it makes financial sense for them to do so, including infrastructure costs and expenses. To the extent that some fleets rent their facilities or are unable to access capital for financing, they have no obligation to purchase ZEVs. The approved regulation is a requirement for manufacturers to sell ZEVs into California, but does not require any individual fleet to purchase ZEVs; therefore, the comment does not appear to be directly applicable to the regulation, and would only be relevant if the regulation required CNG fleets to purchase ZEVs.

The commenter asserts that the cost burden of the regulation is higher for a fleet that invested in CNG infrastructure than for fleets that have not similarly invested in CNG infrastructure. That assertion is incorrect for the following reasons. First, the implication that CNG fleets would not be able to recoup their investments means such fleets would not be as likely to purchase ZEVs compared to another fleet that has not made the same investment. Therefore, it is reasonable to assume that fleets that have not invested in CNG infrastructure would purchase ZEVs as was done in the staff analysis. The staff analysis is intended to reflect a representative scenario of what is likely to

happen with the approved regulation and it would not be useful to model situations or scenarios that are simply unlikely or are outlier examples.

On a related note, the approved ACT regulation includes a mandatory large entity reporting requirement that includes questions about existing infrastructure investments to better inform future ZEV regulations that may affect fleets, which is discussed further in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Gather Information on Existing Infrastructure Costs”.

Economic Analysis – Impact of COVID-19

Comment: Commenter states that due to COVID-19, the market analysis should be updated to reflect the current and future economic conditions that will affect availability of ZEV’s and sources of available funding for government agencies to procure them. [RP1-181]

Comment: Commenter states that COVID-19 will reduce the lead time that manufacturers need to comply with the rule, reduce the needed capital and financial assistance to fund the higher truck purchase prices and operational costs associated with the ACT regulation, and reduce the time and capital available to develop the necessary charging infrastructure, and considering California’s budget situation it will be much harder for the state to fund incentive programs needed to offset the higher purchase and operational costs of ZE trucks. [RP1-218]

Comment: Commenter states that manufacturers have been impacted by COVID-19 and it is unclear how they will prioritize OEM's capital investments and MDE/HDE platform development. [RP1-232]

Comment: Commenter states that they have started to invest in RNG which runs 90% cleaner than diesel and making a premature push towards electrification when ratepayers are already experiencing financial hardship from COVID-19 will stop the progress made towards California's climate goals. [RP1-233]

Comment: Commenter states concern regarding the budgetary impact of COVID-19 and CARB should prioritize robust funding levels and ongoing market assessments to ensure the 2024 implementation dates remain reasonable and that the Advanced Clean Truck regulation is successful in achieving its goal of stimulating technology development and improved EV market options. [RP1-244]

Comment: Commenter states that CARB needs to consider the economic impacts of COVID-19 on the trucking industry. [RP1-247, RP1-260-Form-300]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes there is an economic impact of the COVID-19 pandemic on truck owners and manufacturers. However, for a number of reasons, staff finds that the regulation’s requirements are feasible in spite of this. First, the ACT regulation does not place any requirements until 2024 MY, giving manufacturers time to plan and

position themselves for the rule's requirements. The ACT regulation is anticipated to deliver economic benefits to trucking fleets and health benefits to Californians. These ZEV deployments will create green, high-quality jobs in infrastructure and zero-emission vehicle manufacturing to stimulate the state's economy. Lastly, the ACT regulation does not require fleets to purchase ZEVs. It requires manufacturers to sell ZEVs, and it will ensure that manufacturers bring competitive ZEV products to market at price points that will meet fleet needs. For these reasons, staff believes the ACT regulation will support the state's recovery from the COVID-19 pandemic and will not be a hindrance.

Economic Analysis – Incorrect Assumptions for Class 2b-3 Vehicles

Comment: Commenter states that the proposed ACT regulation incorrectly analyzes the TCO of Class 2b-3 vehicles, including incorrect vehicle lifetime/ownership period, assumes decreasing fuel economy of gasoline trucks, no battery replacement assumed for class 2b-3 vehicles, an underestimate of the number of individuals and small businesses ineligible for LCFS credits, and assumes too small battery sizes for vehicles which will be used to tow. [RP1-218]

Comment: Commenter states that the TCO analysis for the Class 2b-3 appears to be using unrealistically small battery sizes – 55 kWh and 80 kWh. In addition, the TCO for Class 2b-3 assumes these vehicle operators will earn LCFS credits, which is unrealistic to assume for non-fleet operators. [RP1-265]

Agency Response: No changes were made to the regulation in response to these comments.

Staff evaluated vehicle life in both the statewide cost analysis and the fleet TCO analysis to assess cost impacts to the state and individual vehicles. See response detailing staff's methodology for vehicle life in chapter "Written Comments Received during the 30-Day Comment Period", section "Economic Analysis – Vehicle Life Assumption is Too Long".

Gasoline fuel economy did not "decrease" as the commenter states. Fuel economy for Class 2b-3 gasoline and diesel vehicles is assumed to rise steadily from 2021 to 2027 and remain constant afterwards. This represents the fuel efficiency standards established in the federal Phase 2 GHG requirements for Class 2b-3 vehicles. See response detailing staff's methodology to calculate fuel economy in chapter "Written Comments Received during the 30-Day Comment Period", section "Economic Analysis – Cost Analysis Underestimated Combustion-Powered Fuel Efficiency".

The LCFS regulation allows non-residential EVSE owners to earn LCFS credits from charging EV's. Residential EV owners cannot claim LCFS credits as the credit is awarded to the utility delivering electricity to the residence. The commenter is conflating two separate topics by claiming that individuals and small businesses cannot claim LCFS credits. Staff does not disagree that a significant portion of Class 2b-3 sales are to small businesses. However, staff's 30 percent assumption discussed in the Staff

Report only applies to individuals. There is no restriction preventing small business owners from claiming LCFS credits. A business who installs a charger at their office can earn LCFS credits with no restrictions and, in fact, some small businesses owning EVs have already begun claiming credit in the LCFS program. Thus, stating that small businesses have “absolutely no opportunity to benefit from LCFS credits” as the commenter claims is factually incorrect.

Staff calculated battery sizes for all vehicles based on the expected efficiency, average daily miles traveled, and adding an additional buffer. Based on these calculations, staff arrived at the 55 kWh and 80 kWh values for Class 2b-3 battery size. Based on these battery sizes, staff estimated the vehicle price would be in the range of \$65,000-70,000 in 2024. This was intended to represent small scale production of electric cargo or passenger vans. In the months since the Staff Report was released, staff has observed new announcements of several zero-emission pickups, vans, and SUVs as described in Attachment C to the 30-Day Changes to the ACT regulation. Many of these advertise higher battery capacities and lower prices simultaneously, indicating staff was overly conservative in our assessment of the Class 2b-3 ZEV market. For these reasons, staff is maintaining the current assumptions for Class 2b-3 vehicles as the resulting price appears reasonable.

Large Entity Reporting – General Support

Comment: Commenter states their support to expand the definition of large entity reporting to include fleets that have 50 or more vehicles. [RP1-140]

Comment: Commenter states support for the exemptions of military vehicles and streamlined reporting due to the elimination of the facility reporting section. [RP1-197]

Comment: Commenter states they support the clarification of the term "broker" in Section 2012(d)(2). [RP1-238]

Comment: Commenter states the vehicle fleet data CARB collects as a part of this process will be an important tool to the utility planning and preparedness efforts to accommodate increased MD/HD EV loads. [RP1-259]

Comment: Commenter supports staff's removal of the facility category reporting requirement. [RP1-302]

Agency Response: Staff appreciates the supportive comments. Additional issues raised by commenters, if any, will be addressed in the applicable sections.

Large Entity Reporting – Regulation Requires Hard-to-Collect Information

Comment: Commenter states it is impossible to comply using 2019 and 2020 data as entities do not have this on record. [RP1-238]

Comment: Commenter states entities have not been previously required to collect emergency dispatch data over the previous three years, so compliance with the

requirement to report the prior three years of vehicle emergency dispatches would be impossible. [RP1-238]

Comment: Commenter states that the following required reporting data are not currently available or are challenging to gather for their fleet: dispatch group, vehicle group, vehicle group mileage averages. [RP1-273]

Agency Response: No changes were made to the regulation in response to these comments. As a part of staff's 30 day modifications, more flexibility has been added to how fleets can collect data for the large entity reporting requirement. More details on this answer are provided in chapter "Comments Received During Original Proposal's 45-Day Comment Period", sections "Large Entity Reporting – Regulation Requires Hard-to-Collect Information" and "Large Entity Reporting – Timing of Data Collection".

Large Entity Reporting – Unclear Language, Unclear Requirements, Unnecessary Information

Comment: Commenter states that the survey is intrusive and does not clearly define the purpose of the collected information. [RP1-210]

Agency Response: See response detailing proposed clarifications and streamlining of the large entity reporting requirement in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Unclear Language, Unclear Requirements, Unnecessary Information".

Large Entity Reporting – Cost Burden

Comment: Commenter states that there is no consideration of cost to companies for completing the survey. [RP1-210]

Comment: Commenter states that CARB has underestimated the number of personnel hours and costs that will be required to produce the information requested for larger fleets. [RP1-44]

Agency Response: No changes were made to the regulation in response to these comments. A detailed streamline of the large entity reporting requirement and updates to cost modeling can be seen in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Cost Burden".

Large Entity Reporting – Insufficient Outreach

Comment: Commenter states that there has been very little outreach to rural local governments regarding the potential impacts of the proposed regulation, especially considering the scale that urban local governments have engaged in the rulemaking. [RP1-34]

Comment: Commenter states that outreach has been limited and requests that CARB host statewide workshops specifically for government fleets to gather comments and feedback. [RP1-181]

Comment: Commenter states that due to minimal CARB outreach, many smaller companies are unaware of the ACT. [RP1-210]

Comment: Commenter requests statewide workshops for government fleets to comment because opportunities to comment have been limited to date. [RP1-255]

Comment: Commenter requests CARB consider extending its current timelines and establish additional public sessions where concerns can be discussed and addressed. [RP1-320]

Agency Response: Staff disagrees with these comments. CARB created a technical workgroup that comprises interested stakeholders including manufacturers, fleets, environmental groups, utilities, technology providers, and fuel providers. In addition to coordinating public workgroup meetings, CARB staff met with over 50 stakeholders, often multiple times, for a total of over 100 individual meetings.

Since 2016, CARB staff held seven workshops, and four workgroup meetings to provide information to the public and solicit feedback. CARB staff posted information regarding these events and any associated materials on the ACT website and distributed notice of these meetings through two public list serves; "actruck" and "zevfleet" that include 3,092 and 1,356 recipients, respectively. The majority of the meetings were available by webcast and teleconference.

In the April 2017 workshop, staff asked fleets to submit answers to a draft fleet survey questionnaire in an effort to gather detailed information about everyday operations of local fleets. This survey was sent to roughly 500 addresses through mail and 1,500 email addresses through the "actruck" list serve on CARB's website. However, the survey failed to provide a sufficient amount of responses to gather the required fleet information, and as a result, staff included the Large Entity Reporting requirement at Governor Jerry Brown's direction in his August 1, 2018 letter to Mary Nichols, Chair of CARB.

In July 2019, staff also mailed notice letters to the 11,000 large entities and fleets that would likely be required to report to seek their participation.

Large Entity Reporting – Bifurcate the Large Entity Reporting from the ACT Regulation

Comment: Commenter states that the reporting requirement for fleet owners and brokers is too cumbersome and should be removed from the rule to be discussed in separate workshop. [RP1-169]

Comment: Commenter states that the reporting requirements should be separated into a new rulemaking. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. See response explaining the time constraints that led staff to include this reporting requirement in the regulation in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Bifurcate the Large Entity Reporting from the ACT Regulation”.

Large Entity Reporting – Unrepresentative Data or More Time Needed Due to COVID-19

Comment: Commenter is concerned that the reduced vehicle usage in 2020 due to COVID-19 would not be typical or representative of the facilities’ normal operations and the use of uncharacteristic data as basis for future rulemaking [RP1-172]

Comment: Commenter suggests data quality for section 2012 will be greatly diminished by the coronavirus pandemic and that ARB should consider alternative means to collect data through an ongoing, iterative process, similar to the approach to be used for collecting facility-specific data. Commenter is concerned that the collection of poor-quality data could have negative consequences for future rules. [RP1-215]

Comment: Commenter states that CARB needs to provide clarification on how the reporting of statewide trucking data collected will be corrected for the impact of COVID-19 and how the data will inform fleet rules if they are already in progress. [RP1-216]

Comment: Commenter suggests that implementation should begin with the industries (warehousing, regional distribution, local delivery and food supply chain) that have not been impacted by COVID. [RP1-192]

Comment: Commenter states that the reporting requirement should be delayed due to COVID-19. [RP1-206]

Comment: Commenter states that there should be more time for reporting because of COVID-19 impacts. [RP1-238]

Comment: Commenter recommends to extend the submittal date to at least April 2022 to allow time to create a data collection procedure and to capture data in the year 2021 due to COVID-19, as data collected for 2020 will not be representative. [RP1-172]

Agency Response: While staff recognizes that the COVID-19 pandemic will affect fleets, much of the information gathered is anticipated to be valid. For example, all of the general information requested in section 2012.1 and facility locations and vehicle counts in section 2012.2 will not be affected by the pandemic. In addition, while the pandemic is having significant impacts on the economy as a whole, many sectors in the trucking industry appear to be relatively unaffected by the economic slowdown. Because of this, the data submitted will still be useful and critical as staff continues developing future zero-emission fleet rules.

Additionally, staff included additional flexibility in selecting representative time periods for data collection, described in chapter “Comments Received During Original

Proposal's 45-Day Comment Period", section "Large Entity Reporting – Timing of Data Collection".

Large Entity Reporting – Data Collection Timing and Reporting Deadline Issues

Comment: Commenter states that entities will need additional time (15 months from enactment) to collect the required information to comply with the reporting requirement and allow businesses sufficient time to learn the process and submit the data correctly the first time. [RP1-169]

Comment: Commenter states if the rule is adopted in June 2020, the earliest possible effective date is October 2020, which leaves facilities only Q4 2020 to collect data, regardless of whether this period is representative as described by staff. This would only leave October 1, 2020 through March 1, 2021 (to give time to consolidate and report collected information) which may not be representative of a fleet's "busy season". The timeframes are impractical, and will result in poor quality data. [RP1-215]

Comment: Commenter states they are concerned about the timeline for reporting (by April 1, 2021) provides less than six months for entities to collect information, count vehicles, and report in order to provide accurate information. [RP1-238]

Comment: Commenter states that the survey should be pushed out to September to not interfere with other reporting deadlines in April. [RP1-210]

Comment: Commenter states in Section 2012(e)(1) that it is not feasible to report by April 1, 2021. Instead, CARB should allow for a full year after adoption for reporting [RP1-238]

Comment: Commenter requests that the ACT regulation provide reporting entities more time to gather the required data, suggesting a deadline of July 1, 2021 instead of April 1, 2021. [RP1-302]

Agency Response: Staff added more guidance language and expanded the potential data collection periods, which directionally addresses some commenter concerns, as discussed in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Timing of Data Collection". Staff still need to gather the information and have sufficient time to analyze it to draw conclusions that will inform the fleet focused strategy that staff has committed to bring to the Board in 2021. Delaying the reporting deadline would be contrary to a speedy return to the Board, as directed by the Board members.

Large Entity Reporting – Only Require Reporting from Fleets

Comment: Commenter states that the reporting requirement should be based on the size of the fleet, not the size of the entity. [RP1-169]

Comment: Commenter in reference to Section 2012(b)(1) states small fleets are subject to the \$50 million revenue threshold and data collected from these entities is better

suited for a non-regulatory facility survey, not regulatory reporting. Commenter recommends this applicability criterion be removed and suggests raising the vehicle threshold so that the administrative burden is commensurate with the value of data collected. [RP1-215]

Agency Response: No changes were made to the regulation in response to these comments. The Large Entity Reporting Requirement is designed to capture information on a cross section of large fleets and large businesses. The reporting requirement was limited to large fleets with 50 or more vehicles and large businesses with greater than \$50 million in annual revenue regardless of fleet size. These thresholds were approved by the Board to balance between collecting information and minimizing administrative burden. These entities have the resources to collect and report the needed information to help inform future regulations. These regulations are expected to affect all fleets in order to meet the Board's Resolution and Governor's Executive Order to achieve a fully zero-emission truck and bus fleet by 2045 where feasible. Gathering information on both large fleets and large businesses is critical to the development of future ZE fleet rules.

Large Entity Reporting – Define Large Fleet as 50 or more Vehicles

Comment: Commenter states that the definition of "large fleet" should be 50 or more vehicles. [RP1-223]

Agency Response: No changes were made to the regulation in response to this comment. The regulation requires fleets of 50 or more vehicles to report information. This is not a definitive definition of "large fleet" as staff will evaluate what an appropriate definition should be for the purposes of the zero-emission fleet rule.

Large Entity Reporting – Smaller Fleet Considerations

Comment: Commenter recommends the strengthening of the ACT regulation reporting by lowering the requirement threshold to fleets of 25 or more vehicles to inform future programs and improve compliance in difficult market segments, such as port drayage. [RP1-46]

Comment: Commenter asks how the ACT regulation will ensure that smaller fleet sizes (<= 50) will not be underrepresented and ensure that incentives will be applied to these smaller fleets. [RP1-26]

Agency Response: No changes were made to the regulation in response to these comments. Based on available information, staff believes that lowering this number further would result in exponentially more fleet respondents with diminishing returns on the value added by the additional data, along with additional time required to process the much larger volume. This would be contrary to the Board's direction to streamline the reporting requirement and to return to the Board expeditiously with fleet recommendations in 2021. Staff is in the process of developing the specifics of a future fleet rule to identify which segments and associated fleet sizes are most suitable for

electrification. Please see the discussion about staff targeting initial requirements to larger businesses and larger fleets because they are in better capitalized positions in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Level Playing Field Analysis”. In addition, regulations are generally not predicated on incentives, as discussed in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Incentive and Funding Policies”.

Large Entity Reporting – Oppose Decreasing Fleet Size Cutoff

Comment: Commenter states that they are disappointed that CARB has increased the number of fleets required to respond to the survey by reducing the vehicle threshold from 100 to 50. [RP1-210]

Comment: Commenter is concerned with changes that decrease the vehicle threshold for reporting entities, as this will require many more fleets to report data. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. While the Board did provide direction to streamline the reporting requirement at the First Board Hearing, they also gave direction to consider lowering the threshold for fleet size. The manufacturer ZEV sales requirements have become more stringent which will mean more fleets need to electrify. As a result, more information on smaller fleets is necessary to develop ZE fleet regulations to support higher manufacturer ZEV sales requirements.

Large Entity Reporting – Allow Public Entities to Report Subsidiaries

Comment: Commenter requests that the ACT regulation clearly allow independent reporting for state and local governments, as is allowed for subsidiaries, joint ventures, or parent companies (as POU and public water agencies are often departments of city government). [RP1-302]

Agency Response: No changes were made to the regulation in response to this comment. Section 2012(e)(1) states that parents may report on behalf of their subsidiaries. This flexibility option is available to both public and private entities affected by the reporting requirement.

Large Entity Reporting – Inclusion of Vehicles Supporting Emergencies

Comment: Commenter asks if non-emergency vehicles that assist with emergencies are subject to reporting requirements. [RP1-215]

Comment: Commenter states that there needs to be clarification on Section 2012.2(b)(2)(O) because it is unclear if they have to report emergency vehicles that responded to an incident or only the vehicles that are non-emergency but responded. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. Vehicles classified as an “emergency vehicle” as defined in California Vehicle Code section 165 are exempt from the reporting requirement. Vehicles not meeting the definition of “emergency vehicle” need to report even if they assist with emergencies.

Large Entity Reporting – Exempt Light-Duty Vehicles

Comment: Commenter states in Section 2012(c) there should be an exemption to the reporting requirement for all passenger and light duty trucks since they are not a part of this rulemaking. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. There are no requirements on light-duty vehicles in the regulation as all references are to vehicles with a GVWR over 8,500 lbs. or more. For this reason, it is unnecessary to add an explicit exemption for light-duty vehicles.

Large Entity Reporting – Exempt Class 2b Pickups

Comment: Commenter states that 3/4 ton pickups should not be included in the ACT reporting requirements because they are governed by other regulations and that the lower limit of the gross vehicle weight should be increased from 8,500 to 10,000 pounds. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation requires manufacturers to produce Class 2b-8 ZEVs. During the development of a future ZE fleet rule development, staff will be evaluating the deployment of ZE Class 2b-8 vehicles. Therefore, it is critical to collect operational information on Class 2b vehicles as part of the reporting requirements.

Large Entity Reporting – Exempt Utility Vehicles

Comment: Commenter states that vehicles operated by utilities should be added to the list of emergency exempt vehicles from the ACT regulation. [RP1-181]

Comment: Commenter requests that CARB add vehicles operated by utilities to the list of exempt emergency vehicles. [RP1-255]

Agency Response: No changes were made to the regulation in response to these comments. Utilities have been identified as a beachhead category and through the Resolution, staff aims to fully electrify the utility sector by 2040. To achieve this goal, gathering specific information on the operations of utility vehicles is critical.

Large Entity Reporting – Remove Off-Road Yard Tractors

Comment: Commenter in reference to Section 2012(e)(3) states that “off-road tractors” should be deleted from the reporting requirements for consistency with the ACT regulation. [RP1-169]

Comment: Commenter recommends that "off-road yard tractors" should be removed and dealt with outside of the regulation, especially as it appears not to be part of the scope of the ACT regulation. [RP1-215]

Agency Response: No changes were made to the regulation in response to these comments. While the manufacturer ZEV sales requirements of the ACT regulation do not place requirements on off-road yard tractors, the upcoming ZE fleet rule and Cargo Handling Equipment regulations will affect yard tractors regardless of whether they operate on-road or off-road. For these reasons, getting a better understanding of their inventory and operations is critical.

Large Entity Reporting – Exempt Small Municipalities

Comment: Commenter recommends that smaller municipal jurisdictions be exempt from the reporting requirement because light-duty and heavy-duty applications are not conducive to ZEV's, rural communities lack the charging infrastructure, and reporting will place an undue economic burden on local agencies. [RP1-34]

Agency Response: No changes were made to the regulation in response to this comment. The Board adopted, through the Resolution, a goal to electrify all government fleets by 2035. Meeting this goal will require deploying ZEVs into public fleets, which may include those belonging to small municipalities. The Resolution does not discriminate between large and small municipalities so staff will need to gather information on these small municipalities to ensure future ZE fleet rule requirements are feasible.

Large Entity Reporting – Remove Fleet Category Definitions

Comment: Commenter states the "facility category" definition should be deleted. [RP1-247]

Agency Response: No changes were made to the regulation in response to this comment. The facility categories are required as stated in section 2012.2(a)(2). Therefore, the definitions for facility categories remain necessary.

Large Entity Reporting – Remove Reporting Requirements for Tax ID and Annual Revenue

Comment: Commenter states that "Federal Taxpayer Identification Number", and the "Total Annual Revenue for the Entity" is not necessary for compliance with the proposed ACT regulation and therefore should be deleted. [RP1-169]

Comment: Commenter states entities should not have to report how much revenue they generate at all. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. The Federal Taxpayer Identification Number is necessary because it is a unique identifier that can be used to identify companies with similar names or identify

subsidiaries of the same company. Total annual revenue for the entity is necessary to ascertain the relative size of different entities. Future fleet rules may have different requirements for larger and smaller businesses, so identifying the relative revenue of different entities is critical

Large Entity Reporting – Remove Reporting Requirements for Emergency Operations

Comment: Commenter recommends that Section 2012(b)(2)(O) should be removed because entities involved with emergency response are not tracking vehicle usage or deployment in those situations; they are focused on assisting with emergencies. The way the question is phrased would require three years of data to be able to answer, which fleets have not been keeping records of, which is impractical to comply with. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. Understanding how vehicles that support emergencies operate is critical in ensuring these vehicles receive sufficient flexibility in the upcoming zero-emission fleet rules. Fleets have indicated they typically will send a portion of their fleet to aid in emergency situations, with the size of the dispatched fleet being dependent on the scale and location of the emergency. Staff does not agree that fleets maintain no records of which vehicles are used to support emergency operations as fleets will need to ensure all equipment is tracked and provide logistic support to these vehicles.

Large Entity Reporting – Remove Weight Limit Question

Comment: Commenter in reference to Section 2012(b)(2)(L) states that this provision is geared toward long haul trucks that have access to scales rather than for businesses that simply use trucks at their facilities. Most companies do not have data on daily or typical weight limits. CCEEB requests to have this provision removed. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. Many trucks across all weight classes face weight challenges as shown in Appendix F to the Staff Report. Because of this, information on potential weight limitations is needed from all vehicles. Because exceeding weight limits is illegal, staff anticipates fleets keep track of which vehicles are operating near their weight limit.

Large Entity Reporting – Remove Useful Life Questions

Comment: Commenter in reference to Section 2012.2(b)(4) states that in order to respond accurately, entities would need more than 20 years of historical data, i.e. data for the useful life of each vehicle. Commenter suggests this provision should be removed. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. Fleets commonly keep records of their assets and other major cost elements such as maintenance and depreciation, which are dependent on the vehicles' age. This

question is intended to reflect general business practices for the most appropriate response category (bin) provided in the regulation, and staff recognizes it could change in the future for a variety of reasons. Furthermore, the question provides easy to categorize response options in five-year increments which should be sufficient for the entity to assess the approximate number of years an asset is typically kept after acquisition.

Large Entity Reporting – Define “Most of the Vehicles”

Comment: Commenter states that CARB should clarify the phrase "most of the vehicles," and identify the ratio or percentage they intend to capture (e.g., a fleet that has more than 75% of their vehicles within approximately 50 miles of the facility). [RP1-172]

Agency Response: No changes were made to the regulation in response to this comment. "Most" has a generally accepted meaning of "more than 50 percent" so no additional definition is required in this rulemaking.

Large Entity Reporting – Define “Tractor”

Comment: Commenter states that the term "tractor" is undefined in the rule. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. The term "tractor" is commonly understood to refer to a tractor trailer or semi-truck used to haul trailers on highways.

Large Entity Reporting – Rephrase “Van-Dry” and “Van-Reefer”

Comment: Commenter in reference to section 2012(3)(A) & (B) states that "van-dry" should read "dry van" and "van-reefer" should read "reefer van" or "reefer" to reflect common nomenclature. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. The regulation text was phrased this way to list the two types of vans next to each other when displayed alphabetically in a reporting system.

Large Entity Reporting – Avoid Using “You”

Comment: Commenter in reference to section 2012.2(a)(8) suggests that the word "you" should be replaced with fleet or entity. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. "Your entity" and "you" are used in multiple places throughout the regulation to indicate information requested from the reporting entity. "You" is correct terminology in these instances.

Large Entity Reporting – Need to Report Data Collection Year

Comment: Commenter asks for clarification on why the distinction in Section 2012.1(a)(20) is necessary. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. The regulation allows reporting entities to report their fleet as it was in any time during 2019 or 2020. This question asks what date was used to gather this information. This is necessary to give time frame context to the data reported, and to better allow comparisons between time periods.

Large Entity Reporting – Insufficient Records for Infrastructure Installation

Comment: Commenter in reference to Section 2012.2(a)(6) and (7) asks to clarify the terms "initially installed" and "on or after" because facilities were not required to keep records of whether or not fueling infrastructure had been installed in 2010 or any time since then, which makes compliance record keeping challenging. This would be particularly true for a facility that changed ownership since 2010. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. The requirement is for fleets to report if they installed fueling infrastructure at any of their vehicle home bases since 2010. Because fueling infrastructure represents a major investment on the part of fleets, staff expects fleets to maintain records of recent infrastructure installations.

Large Entity Reporting – Require Pre-2010 Infrastructure Information

Comment: Commenter states that in section 2012.2(a)(6)(A) to 2012.2(a)(6)(G) the word "initially" should be removed, and modify "after January 1, 2010" to read "after January 1, 2000" to inform future TCO analysis based on the 20-year amortization period. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. In comments at the December 12, 2020 hearing, the Board directed staff to streamline the reporting requirement. Increasing the amount of information required would go against the Board direction. In addition, staff does not currently plan for future fleet rules to require full electrification prior to 2030, meaning that infrastructure installed prior to 2010 will be able to be fully amortized.

Staff will include a field in the reporting template for the reporting entity to share additional information. This can include information on older infrastructure if the respondent so chooses.

Large Entity Reporting – Reporting Facilities Outside of California

Comment: Commenter states Section 2012.2 needs to explicitly exclude locations outside of California. [RP1-247]

Agency Response: No changes were made to the regulation in response to this comment. The regulation states regulated entities must report facilities within California with vehicles. In addition, for vehicles that accrue the majority of their miles within California, either the company headquarters or the vehicle facility outside of California

must be reported. Facilities with vehicles that do not accrue the majority of their miles within California do not need to be reported.

Large Entity Reporting – Clarify Exempt Military Facilities to be “Operational” not “Tactical”

Comment: Commenter in reference to Section 2012(c)(4) requests the exemption for military facilities be for "operational" rather than "tactical" because the description better meets CARB's stated intent for which facilities should provide information. [RP1-197]

Agency Response: No changes were made to the regulation in response to this comment. Military tactical vehicles and military tactical facilities are exempt from the approved regulation to minimize any potential national security concerns and because staff does not foresee including them in any future ZEV fleet regulations.

Large Entity Reporting – Clarify Record Keeping for Dispatched Vehicles

Comment: Commenter requests clarification of the term "brokers" that dispatch vehicles because the term "dispatched" are specific to brokers except this one, which also appears to be directed toward brokers but is it not specified as such. [RP1-215]

Comment: Commenter recommends clarification of language in Section 2012(e)(3)(B) because there are no requirements in the rule that use the term "dispatch" that are not related to brokers, except this section. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. Section 2012(e)(3)(B) states what types of records would need to be retained for vehicles "not owned but dispatched by the entity." This certainly would apply to Brokers, but could also apply to any other company that directs the movement of vehicles. For example, some motor carriers own vehicles and also provide brokerage services.

Large Entity Reporting – Clarify Language Regarding Fueling Infrastructure Installation

Comment: Commenter states in Section 2012.2(a)(7) there needs to be clarification for the difference between "fueling infrastructure" and "refueling infrastructure", and to provide clarification on whether the question is referring to a single point in time or a period in which the station was opened. [RP1-238]

Agency Response: Staff did not intend for there to be a difference between "fueling infrastructure" and "refueling infrastructure". Staff has made a non-substantive change to the regulation text to refer to both as "fueling infrastructure."

The date of initial installation is treated as a single point in time. The phrase "on or after" was used to provide more clarity as to whether January 1, 2010, was included rather than leave it ambiguous.

Large Entity Reporting – Clarify What Type of Infrastructure to Report

Comment: Commenter states there needs to be clarification on the "Refueling Infrastructure", which can refer to the equipment/system that dispenses fuel to vehicles or can also refer to equipment that supports the fuel dispensing activities. [RP1-230]

Agency Response: No changes were made to the regulation in response to this comment. The purpose of this particular reporting requirement is to gather information on what fueling capabilities currently exist on fleets' property and what investments were made recently. This can include both fueling infrastructure and infrastructure used to support refueling such as fuel dispensing devices.

Large Entity Reporting – Clarify How to Determine If Locations Are Similar

Comment: Commenter in reference to Section 2012.2(b)(7) asks if two or more "locations" should be deemed "similar" if operations are similar but they have different sized service areas, or different numbers of vehicles domiciled there. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. There is no limitation that the service areas need to be identical or the number of vehicles be different, these can differ and still be substantially similar.

Large Entity Reporting – Clarify Requirements Regarding Sustainability Plans

Comment: Commenter requests clarification of intent in Section 2012.1(a)(17)-(18). Commenter states the term sustainability plan means different things to different industries. Will entities that have a sustainability plan be exempt from future rulemaking? If so, what should this sustainability plan look like? Must it include electric vehicles use as a component? Will it have an emissions reduction requirement? [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. The purpose of the sustainability plan questions is to understand how many companies in which sectors have or have not incorporated sustainability into their business plan, with a focus on transportation issues. This is meant to inform future decision making for the zero-emission fleet rule and does not place requirements on fleets to develop future sustainability plans

Large Entity Reporting – Clarify Requirements on Vehicles Not Registered with the Department of Motor Vehicles

Comment: Commenter would like know how to handle vehicles that operate on private property but are not registered with DMV? Under this definition, these vehicles would not have fleet owners. [RP1-215]

Comment: Commenter states Section 2012(d)(10) and Section 2012 (e)(3)(C) need clarification about vehicles that operate on private property and are not registered at DMV. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. The regulation does not exclude on-road vehicles who are not registered with the DMV. Fleets should report their on-road vehicles regardless of whether they are registered with DMV or not.

Large Entity Reporting – Clarify Language Regarding Light-duty Vehicles

Comment: Commenter recommends that the definition of light-duty vehicles be removed since this vehicle class is outside the scope of the ACT regulation. [RP1-215]

Comment: Commenter states that Section 2012.2 should clarify that information on vehicle home bases should only be required for locations that have vehicles over 8,500 GVWR, and not for a location where only light-duty vehicle or those under 8,500 GVWR are domiciled. [RP1-215]

Comment: Commenter states in Section 2012.2 that entities that meet the income threshold that have light-duty vehicles but no heavy-duty should not be required to report. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. The “weight class bin” definition contains a sub-definition of “light-duty”. Including this definition is simply meant to help fleets determine what is, and what is not, a light-duty vehicle.

Light-duty vehicles have no reporting requirements and vehicle home bases with only light-duty vehicles do not need to be reported.

Large Entity Reporting – Clarify How to Calculate Mileage Bins

Comment: Commenter in reference to Section 2012.2(b)(2)(A) through (E) asks to clarify whether responses in (B) through (E) are additive to (A) and so on down the list. [RP1-215]

Comment: Commenter states Section 2012.2(b)(3)(A) through (E) needs clarification if the responses to (B), (C), (D), etc. are additive with the percentages from (A) or should be listed separately for each category [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. As clearly described in Sections 2012.2(b)(2)(A) through (E), the percentage responses should add up to 100% and each individual vehicle should only be reported in one bin.

Large Entity Reporting – Clarify Meaning of “Vehicle Group”

Comment: Commenter in reference to section 2012 states that CARB should define “vehicle group” as the “vehicle’s body type”, “weight class bin, and “fuel type” [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. The regulation states that vehicle responses must be grouped by vehicle

body type, weight class bin, and fuel type. The regulation then asks for information by vehicle group. The vehicle group refers to vehicles with the same vehicle body type, weight class bin, and fuel type.

Large Entity Reporting – Clarify Meaning of “Common Ownership and Control”

Comment: Commenter states that in Section 2012(d)(3) there needs to be clarification on the meaning of the term "common ownership or control" and how it applies to the various entities the rule applies to. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. The term “common ownership or control” aligns with the same definition in the Truck & Bus regulation and the In-Use Off-Road Diesel Fueled-Fleets regulation. Vehicles under “common ownership and control” means they are owned by the same person, corporation, partnership, or association. In addition, vehicles managed day to day by the same directors, officers, or managers, or by corporations controlled by the same majority stockholders are considered to be under common control even if their title is held by different business entities. This includes vehicles that are rented or leased from a business that regularly engages in the trade or business of leasing or renting motor vehicles without drivers where the vehicle rental or leasing agreement for the use of a vehicle is for a period of one or more years. This term applies to regulated entities subject to the reporting requirements as specified in sections 2012.1 and 2012.2.

Large Entity Reporting – Clarify Meaning of “Represent Your Brand”

Comment: Commenter states CARB should clarify what is meant by “represent your brand” and “to serve your customers?” Does this mean the truck must have a company’s logo on it, or that contractors are delivering product in containers with a company’s logo? [RP1-215]

Comment: Commenter states Section 2012.1(a)(15) is unclear. Commenter requests clarification of what it means to “represent your brand” and “serve your customers.” Does this mean the truck or its container must have a logo on it? Does the contract have to specify a vehicle over 8,500 lbs. in order to trigger this section? [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. As described in the Staff Report, the intent of this section is to determine whether regulated entities use subcontractors or subhaulers that use vehicles over 8,500 lbs. GVWR in their typical business, the number of trucks that subhaulers use, and whether subhaulers are operating under the regulated entity’s authority. This information will help answer questions about whether an entity uses its own trucks or relies on other entities to conduct their business. Establishing a level playing field for future rule development is our primary concern.

Large Entity Reporting – Clarify Meaning of “Dispatched”

Comment: Commenter states entities that deliver cargo from material suppliers should be excluded from the “dispatched” definition to be consistent with guidance for the Truck and Bus Regulation "How to verify if hired fleets comply." [RP1-145]

Comment: Commenter would like to know if materials delivered by a third-party are considered “dispatched” by the entity, such as pick-up and transport of recycling? [RP1-215]

Agency Response: No changes were made to the regulation in response to these comments. As written, the regulation’s definition of “dispatched” does not include ordering items or materials where the purchaser is not involved in determining how the delivery is made. For example, if a purchaser orders material from a supplier, then the supplier ships the order, the purchaser did not dispatch the shipment. The intent of the definition “dispatch” is to identify entities, including third-parties such as brokers or subcontractors, that provide direction or instruction for the routing of a vehicle to a specified destination for a specific purpose, including the pick-up and transport of materials for recycling.

Large Entity Reporting – Clarify Meaning of “Operated”

Comment: Commenter states that "operated" should mean that the entity, fleet owner, broker, or agency operated vehicles at a California facility whether or not it was owned or leased by the entity, fleet owner, broker, or agency. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. The term “operated” correlates to the one of the preceding terms “common ownership or control” or “dispatched” as it relates to the Large Entity Reporting Requirements. Please see the definitions of “common ownership or controlled” and “dispatched” for further clarification.

Large Entity Reporting – Define “Fleet” Same as Truck and Bus Regulation

Comment: Commenter states the "fleet" definition should be the same as the definition used in the Truck and Bus Regulation, Title 13, California Code of Regulations, Section 2025(d)(29). [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. The definition of “fleet” in the Truck and Bus Regulation includes definitions of “federal fleet” and “rented or leased fleets” which are unnecessary for this regulation. In addition, the definition in the Truck and Bus Regulation does not mention “common ownership or control” which is necessary for the Large Entity Reporting. For these reasons, the definition within the Truck and Bus Regulation was not used.

Large Entity Reporting – Enforcement Policy Concerns

Comment: Commenter requests that CARB clarify in the rule or final Staff Report what enforcement standards it will use to determine violations. [RP1-215]

Comment: Commenter states Section 2012(e)(4) should specify how CARB will enforce penalties and what exactly would cause a penalty to occur when the reporting is based off of best estimates. [RP1-238]

Comment: Commenter states CARB should reconsider strict, prescriptive timelines for enforcement of reporting entities because the short time frame [to respond to a CARB request for clarification] can be problematic and that good faith efforts should guide enforcement and potential violations. [RP1-216]

Comment: Commenter states that a 14-day period to respond to CARB requests for clarification is not sufficient, as it takes time to route CARB requests to proper staff, and time to gather the information requested. More time should be provided. [RP1-215]

Agency Response: No changes were made to the regulation in response to these comments. Staff added language to the originally proposed regulation stating that regulated entities have 14 days to respond to a request by CARB for clarification of reported information. This helps ensure that if reported data is unclear, there is a pathway for remediation without enforcement action. For more detail on this topic please refer to chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Enforcement Concerns”.

Large Entity Reporting – Specifically Exclude Light-Duty in Home Base Scope

Comment: Commenter states the language in Section 2012.2(a) is inconsistent with Section 2012.2 and 2012.2(b) and recommends reporting for vehicle home bases with at least one vehicle above 8,500 lbs. [RP1-172]

Agency Response: No changes were made to the regulation in response to this comment. Section 2012.2 states that vehicles with a GVWR greater than 8,500 lbs. must report general information about the vehicle home base and the vehicle operating characteristics as specified in Section 2012.2(a) and 2012.2(b), respectively. The purpose of the ACT regulation is to accelerate the adoption of zero-emission technologies in the medium- and heavy-duty vehicle sectors, which are vehicles over 8,500 lbs. GVWR. For this reason, it was unnecessary to add the 8,500 lbs. GVWR threshold to Section 2012.2(a).

Large Entity Reporting – Allow Optional Vehicle Usage Metrics

Comment: Commenter states that in order to capture the unique operation of high usage vehicles that are not represented solely using mileage, CARB should include an optional measurement of usage category for each bin (e.g. hours/day or a percentage of time the equipment is used.) [RP1-288]

Agency Response: No changes were made to the regulation in response to this comment. The ACT Regulation balances the need to collect important and critical fleet information with Board direction to streamline the reporting and reduce burden on affected entities. Staff intends to allow fleets to submit voluntary information as part of their reporting. Additionally, staff intends to request and accept additional information from fleets as part of a future zero-emission fleet rule.

Large Entity Reporting – Add Reporting of Auxiliary Equipment Utilization

Comment: Commenter recommends including the percentage of vehicles in each weight bin that utilize auxiliary equipment (> 50 bhp), and the power requirements for the auxiliary equipment as responsive categories for the large entity reporting requirement. [RP1-288]

Agency Response: No changes were made to the regulation in response to this comment. The information commenter is asking for would provide information about power take off units and vehicles that rely on that auxiliary equipment. The goal of the regulation is designed to enable a large-scale transition to zero-emission technologies in the medium- and heavy-duty truck market. Electric power take-off technologies are already fully commercialized, so gathering information about them is not necessary. Additionally, the Board directed staff to streamline the reporting requirement. Adding more questions that would not significantly help drive the zero-emission transition is contrary to Board direction. Respondents may add clarifying or contextual information to their reports if they so choose, which is directionally consistent with the commenter's request.

Large Entity Reporting – Modify Questions on Emergency Usage

Comment: Commenter states that the definition of emergency should not be limited to "infrequent acts of nature," and should include imminent threats to public health and safety.

Commenter recommends asking facilities whether a majority of a fleet vehicle group is generally subject to emergency usage, making sure to define what is considered as "majority" (e.g., more than 75%), rather than the current emergency usage question. [RP1-172]

Agency Response: No changes were made to the regulation in response to this comment. The regulation states: "The highest approximate percent of the fleet vehicle group that was dispatched at the same time over the last 3 years on the behalf of a local, state or federal government to support an emergency operation such as repairing or preventing damage to roads, buildings, terrain, and infrastructure as a result of an earthquake, flood, storm, fire, terrorism, or other infrequent acts of nature"; that statement includes but is not limited to the types of listed emergencies. This list is not exhaustive and can include other threats to public health and safety which can reasonably be categorized as emergencies.

The purpose of this reporting requirement is to determine the relative portion of vehicles who have been actively involved in responding to emergency situations. During emergency scenarios, a portion of the fleet will need to respond to the emergency while a separate portion will need to remain at the home base to service the local territory. This reporting information is designed to better understand how fleets use their vehicles during emergencies to determine which can and cannot be electrified.

Large Entity Reporting – Inconsistent Definition of Backup Vehicle

Comment: Commenter states that the definition of back-up vehicle in the ACT regulation is not consistent with the definition in the Truck and Bus regulation or Solid Waste Collection Vehicle regulation. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. Different regulations use different definitions of “backup vehicle”. The definition of “backup vehicle” for this regulation was intentionally broad, and was meant to capture vehicles not commonly used in daily operations across all of California’s trucking sectors.

Furthermore, the definition of “backup vehicle” was removed in the 2019 amendments to the Solid Waste Collection Vehicle regulation and can no longer be cited as a relevant definition.

Large Entity Reporting – Determining Representative Vehicle Mileage

Comment: Commenter asks in Section 2012.2(b)(2) how an entity would determine if the data is representing 90 percent of a vehicles operating day. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. As written, the regulation provides flexibility in how the reporting entity can determine the 90 percent threshold for their own vehicles. The regulation language was expanded to include addition guidance on how to select a timeframe based on the information available to the fleet owner. In addition, language was added on how to interpret existing data to complete the reporting. The language clarifies that a fleet may collect information from a sample of their vehicles to complete their responses and decrease the administrative burden.

Large Entity Reporting – Expand “Responsible Official” Definition for Public Agencies

Comment: Commenter states there needs to be an expanded definition of "Responsible Official" in Section 2012(d)(16)(C). Commenter recommends “For a municipality, state, federal, or other governmental agency: Either a principal executive officer or ranking elected official or their delegate, designee, or any other person who performs similar policy or decision-making functions for the agency.” [RP1-230]

Comment: Commenter suggests added flexibility in definition for “Responsible Official” in section 2012 (d)(16)(C), requesting that the flexibility currently extended to

corporations and partnerships be extended to public agencies. The ACT regulation should allow for principal executive officer's delegate/designee to report and retain records. [RP1-288]

Agency Response: No changes were made to the regulation in response to these comments. As described in Section 2012(e)(3) of the ACT regulation, the term “responsible official” is only used to specify who the record retention provisions apply to. Thus, the current definition is appropriate for its usage.

Large Entity Reporting – Develop Two Reporting Systems

Comment: Commenter would like to know if the online reporting system will allow for both a main response method and an alternative response method. Commenter recommends that CARB work with users to beta test the system well in advance of the April 1, 2021 deadline, allowing enough time to fix any bugs or flaws. [RP1-215]

Comment: Commenter states that the needed reporting system should allow a main response method and an alternative response method, both of which are built in a time frame to allow user testing. [RP1-238]

Agency Response: No changes were made to the regulation in response to these comments. Staff intends to develop a reporting template based on an Excel spreadsheet-based reporting system which is anticipated to be quick and easy to complete. Staff anticipates releasing the reporting template and the upload site by the end of 2020. Due to this, there is no need to develop two separate reporting systems for the Large Entity Reporting.

Large Entity Reporting – Separately Report Renewable Diesel Infrastructure

Comment: Commenter states that renewable diesel should be included as an option for fuel types dispensed at a facility in the reporting requirement. [RP1-07]

Comment: Commenter states they support adding "renewable diesel" as a selectable fuel type to the revised section 2012.2. [RP1-232]

Agency Response: No changes were made to the regulation in response to these comments. Because renewable diesel is chemically similar to fossil diesel, it can function as a “drop-in” replacement fuel. This means that there is no difference between renewable diesel infrastructure and conventional diesel infrastructure.

Large Entity Reporting – Clarification on Why Brokers Need to Report Directed Vehicles

Comment: Commenter states Section 2012(e)(1) needs clarification as to why brokerages or entities with motor carrier authority must report vehicles if they do not own them. [RP1-238]

Agency Response: No changes were made to the regulation in response to this comment. A goal identified for future fleet rules is to ensure a level playing field

between different companies. For example, this includes ensuring that a fleet with 100 trucks has similar requirements to a broker directing 100 trucks as they can compete for the same job. Information on the size and operation of brokers is necessary to inform future decision making in zero-emission fleet rules. Gathering information on the vehicles they direct is needed to determine whether the vehicles they direct can be electrified.

Large Entity Reporting – Use “Four-Wheel Drive” instead of “All-Wheel Drive”

Comment: Commenter in reference to section 2012 states that “all-wheel drive” vehicles should include “four-wheel drive” vehicles. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. Four-wheel drive and all-wheel drive are different technologies and are not interchangeable. Staff choose to use the term “all-wheel drive” to specifically describe vehicles where power is delivered to all wheels as this is a good indicator for off-road operation and other activities which may pose a challenge to electrification. In the heavy-duty world, four-wheel drive could refer to a wide variety of vehicles and gives insufficient clarity to determine how the vehicle is being used. For these reasons, “all-wheel drive” is preferred.

Large Entity Reporting – Add Additional Questions for Fueling Stations

Comment: Commenter states that additional information should be reported for natural gas, hydrogen, and electric fueling stations. [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. At the December Board Hearing, the Board gave broad direction to streamline the reporting requirement where feasible. These additional reporting requirements would offer minimal information while increasing the reporting burden. Thus, the value added does not support this additional burden.

Large Entity Reporting – Request More Detailed Information than Average Daily Miles

Comment: Commenter states that fleet survey questions should attempt to better understand and collect data on fleet services and the communities they serve to ensure an accurate understanding of the all-electric range (AER) potential of PHEV trucks [RP1-64]

Comment: Commenter suggests instead of asking for the daily average miles for each vehicle body type, it may be beneficial for CARB to take into consideration the maximum hourly usage, the maximum fuel range within the fleet, and a description of common tasks being performed. This data shows how long a vehicle is operating within a fuel range that is capable of efficiently handling the facility’s day-to-day operations. [RP1-172]

Comment: Commenter states average miles per day may be a poor indicator of whether or not a vehicle is suitable for electrification, as it does not describe the upper range of miles at which a vehicle operates. Average daily miles also do not capture information regarding vehicles who travel short distances but idle at job sites, such as aerial bucket trucks. Other metrics would be appropriate for these scenarios. [RP1-215]

Comment: Commenter requests the reporting requirement include the percent of the total vehicles that have devices that run off of the engine to power equipment (e.g., PTOs) and average hours of vehicle operation per day (may be broken into 8-hour shifts) to better characterize commenter's vehicle usage. [RP1-230]

Agency Response: No changes were made to the regulation in response to these comments. While staff recognizes that daily average miles presents some issues in representing vehicle usage, requiring more detailed data would significantly increase the reporting burden on fleets. Given Board direction to streamline reporting, staff chose to maintain the current requirements for vehicle operations reporting.

Large Entity Reporting – Use TRUCRS to Export Existing Fleet Data

Comment: Commenter states the TRUCRS should allow the export of data to satisfy the reporting requirement for the body type, weight bin and fuel types. Furthermore, the commenter states that TRUCRS should be modified to allow manual data entry and large fleet importing for Class 2b-3 trucks and larger vehicles of multiple fuel types not currently available in TRUCRS (e.g., CNG/LNG). [RP1-145]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion about the use of TRUCRS and the development of a new reporting system for the collection of information in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Use TRUCRS System for Reporting”.

Large Entity Reporting – Data Security Standard

Comment: Commenter states if the survey is completed online, how can CARB assure that confidential information will be protected? [RP1-210]

Agency Response: No changes were made to the regulation in response to this comment. CARB will follow Federal and State guidelines to secure confidential and personally identifiable information. For further details on this subject, please refer to chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Confidentiality, Proprietary Info, Security, and Public Record Act Requests”.

Large Entity Reporting – Allow Voluntary Submission of Real-World Data

Comment: Commenter suggests the regulation include a voluntary method to collect real-world data from fleets. [RP1-64]

Agency Response: No changes were made to the regulation in response to this comment. Staff intends to allow fleets to submit voluntary information as part of their reporting. However, submitting real-world vehicle data will require significant additions to the reporting system. Staff will evaluate if and how to voluntarily collect real-world data as part of the implantation process for this regulation.

Large Entity Reporting – Limit Scope to Facilities with Infrastructure or Tractors

Comment: Commenter suggests changing the language to identify facilities with fueling infrastructure and/or tractors instead of capturing all facilities with all the submitted information to decrease workload and provide relevant data. [RP1-172]

Agency Response: No changes were made to the regulation in response to this comment. Limiting the scope to only facilities with fueling infrastructure or to only those facilities with tractors would leave out information about many other vehicle categories that are well suited for electrification, and would undermine the Board’s direction to achieve zero-emission goals in those categories. The Board directed staff to streamline the reporting requirement, but also to ensure needed data are collected. The Board also directed staff to bring a fleet rule to the Board in 2021, as stated in the Resolution. In order to craft a well-informed fleet rule that seeks to achieve the zero-emission goals adopted by the Board in the resolution and other statewide goals, including achieving carbon neutrality by 2045, staff will need data on where trucks are located, regardless of where fueling infrastructure currently exists, and how those vehicles are used across the entire medium- and heavy-duty vehicle spectrum.

Large Entity Reporting - Implementation Guidance and Standards

Comment: Commenter states that CARB should develop standards describing the level of data accuracy required, and provide entities with clear and transparent guidance on how compliance will be determined, as well as priorities for enforcement. [RP1-215]

Agency Response: No changes were made to the regulation in response to this comment. The regulation contains guidance that gives regulated entities direction on how to complete their reporting requirement to the level of data accuracy that is required. Staff has additionally added language to the regulation in the 30-day changes specifying the process that staff will be able to contact regulated entities to clarify reported data if discrepancies appear to exist. These modifications create a balance between allowing fleets to use data that is simple to correct and allowing CARB the ability to validate data received. For further discussion on enforcement policy for the regulation, see chapter “Written Comments Received During the 30-Day Comment Period”, section “Large Entity Reporting – Enforcement Policy Concerns”.

Future ZEV Policy – Accelerate Zero-Emission Fleet Rules

Comment: Commenter states that ARB should accelerate the fleet rule to begin no later than the ACT regulation sales requirement in 2024. [RP1-46, RP1-188]

Comment: Commenter urges an earlier adoption of the fleet purchase requirement. [RP1-120]

Comment: Commenter supports strong resolution language linking the ACT regulation to the ACT fleet regulation. Commenter states the fleet rule should support the ACT regulation by creating demand for the truck segments that are market ready, like Class 4-6 and Class2b3 vans. [RP1-241]

Comment: Commenter recommends developing and adopting fleet purchase requirements that mirror the sales targets in the proposed ACT regulations built around the beachhead strategy and applications. Commenter states for other M-HDV classes, CARB is developing fleet rules before the OEM rule, and other rules already adopted (Innovative Clean Transit, Airport Shuttles) took many years to develop, even though they only applied to a very small sector of the MHDV market. Commenter sees a risk of the fleet mandate timeframes lagging the OEM timeframes, which could substantially undermine the successful rollout of the trucks and the regulation. [RP1-265]

Comment: Commenter states development of complementary regulations, including a strategic link of a fleet rule to ACT, is imperative. [RP1-281]

Comment: Commenter recommends CARB expeditiously pursue standards for truck fleet electrification, similar to policies passed for transit buses and airport shuttle buses. [RP1-294]

Comment: Commenter urges accelerating the development of the CARB fleet rule for adoption in late 2021, but ensuring that the rule is implemented no later than 2024. Commenter urges CARB to require that the upcoming CARB fleet rule is stringent enough to reach Governor Jerry Brown's carbon-neutrality by 2045 goal established in Executive Order B-55-18. [RP1-297]

Comment: Commenter recommends accelerating the development of the fleet rule for adoption in late 2021, but ensuring that it is implemented no later than 2024. [RP1-330]

Agency Response: No changes were made to the regulation in response to these comments. The Board directed staff to return with a ZE fleet rule in 2021 when they approved the Resolution, which directionally meets commenters' requests. Staff recognizes that ZE fleet rules will be a key factor in ensuring fleet uptake of ZEVs to meet the targets established in the Resolution. Staff has begun the regulatory process for developing the ZE fleet rules with a goal of returning to the Board with a recommendation by the end of 2021.

Future ZEV Policy – Commit to 100 Percent Zero-Emission Targets

Comment: Commenter states that the rule should articulate a clear vision for when each truck segment should be 100% zero-emission and explain how those targets are consistent with the state's climate and clean air objectives. [RP1-46]

Comment: Commenter states that CARB should formally commit to transition ZEV timelines and that giving tax credits to fleet purchasers will support this effort. [RP1-125]

Comment: Commenter states CARB should formalize goals for 100 percent ZEVs in each truck class and demonstrate how reaching these goals is consistent with attaining state and federal air quality and GHG requirements. [RP1-188]

Comment: Commenter states CARB should electrify all modes of transportation. [RP1-260-Form-2507]

Comment: Commenter states after the ACT regulation, we need to electrify all tractors. [RP1-260-Form-3838]

Comment: Commenter urges requiring a 100% ZEV fleet of local buses, refuse trucks, and first/last mile delivery trucks by 2030, instead of 2040. [RP1-287]

Comment: Commenter recommends CARB formally commit to timelines for transitioning trucks in California to electric technologies, so that most, if not all, trucks in the state will be electric within the next 20 years. [RP1-294]

Comment: Commenter urges CARB to institutionalize targets on reaching zero-emissions: ZE drayage fleet by 2035 or sooner; ZE first/last mile delivery, refuse and local buses by 2040; ZE/plug-in hybrid for utility and government fleet by 2040; ZE/plug-in hybrid for all other truck segments, 'where feasible' by 2045 [RP1-297, RP1-330]

Comment: Commenter urges CARB to clearly articulate when our communities can expect all truck sales must be 100% zero-emission. [RP1-297, RP1-330]

Agency Response: No changes were made to the regulation in response to these comments. Although this is outside the scope of this regulation, the Board has committed through the Resolution to develop complementary zero-emission fleet rules with an ultimate goal of transitioning the state's fleet to zero-emission by 2045 where feasible. Achieving this goal and converting the state's fleet to the cleanest possible technologies will put us on a pathway to achieve our state's 2045 carbon neutrality goal. The ACT regulation takes the first step in ensuring manufacturers are building the needed ZEVs at high volumes to eventually achieve 100% ZEV fleets. Please see the discussion on establishing 100 percent zero-emission targets in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Future ZEV Policy – Set Clear 100 Percent ZEV Targets". Also, see the discussion about staff's efforts to develop a future fleet rule in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Future ZEV Policy – Adopt Zero-Emission Fleet Rule in 2021".

Future ZEV Policy – Exempt Rural and Low Throughput Ports

Comment: Commenter states that the revised ACT should exempt rural areas and low through-put ports because it is cost prohibitive and emissions are low. [RP1-169]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation does not place any ZEV purchase requirements on fleets or ports. The Board directed staff to set a goal to electrify the state's drayage fleet by 2035, as discussed in the Resolution, and staff will be evaluating strategies to achieve this target. In doing so, staff will consider special provisions for rural areas and low throughput ports if necessary.

Future ZEV Policy – Rule Puts Small Businesses at a Disadvantage

Comment: Commenter states that stricter timelines for ZEV compliance will put smaller transportation companies out of business and urges the Board to reconsider aggressive timelines. [RP1-05]

Comment: Commenter states that small businesses are at a financial disadvantage and suggests subsidies for replacements. [RP1-15]

Comment: Commenter states we need to subsidize small trucking businesses. [RP1-179]

Agency Response: No changes were made to the regulation in response to these comments. The ACT regulation does not require smaller fleets to purchase ZEVs. Manufacturers must build ZEVs and market their products to fleets where electrification makes sense. This may prove advantageous to small fleets as ZEVs are projected to have a lower total cost of ownership than their combustion-powered counterparts. Staff will evaluate how to address small fleets in the future ZE fleet rule.

Future ZEV Policy - Add Targets for Light Duty Vehicles

Comment: Commenter states that targets should include trucks in the Class 1-3 range [RP1-77]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation is designed to regulate all vehicles not included in the light-duty ZEV regulation. Including light-duty vehicles is outside the scope of this regulation. In addition, CARB is currently developing the Advanced Clean Cars II regulation which will set future regulatory goals for the light-duty ZEV market. Therefore, light-duty ZEVs will be addressed, but not in the ACT regulation.

Future ZEV Policy – Develop a Zero-Emission Fleet Rule that Achieves Carbon Neutrality

Comment: Commenter requests that CARB requires the fleet rule to be stringent enough to reach carbon-neutrality by 2045. [RP1-330]

Agency Response: The Board has committed through the Resolution to develop complementary zero-emission fleet rules with an ultimate goal of transitioning the state's fleet to zero-emission by 2045 where feasible. Achieving this goal and converting the state's fleet to the cleanest possible technologies will put us on a pathway to achieve

our state's 2045 carbon neutrality goal. The ACT regulation takes the first step in ensuring manufacturers are building the needed ZEVs at high volumes.

Future ZEV Policy – Evaluate Zero-Emission Zones

Comment: Commenter states that well-located urban ZEV zones could help to increase market penetration of ZEVs in California and could align closely with needed fleet rules. Beachhead applications ready for zero-emissions technology are highly aligned with suburban and urban region duty cycles. Targeting zero-emission zones for urban California regions would have the benefit of spurring adoption and use of vehicles most conducive to electrification where unhealthy air quality persists. [RP1-265]

Agency Response: No changes were made to the regulation in response to this comment. Although this comment is outside the scope of this Rulemaking, staff recognizes the potential of zero-emission zones in driving ZEV adoption in fleets and will evaluate them as a part of the upcoming zero-emission fleet rules.

Future ZEV Policy – Allow Early Action Credit in the ZE Fleet Rules

Comment: Commenter suggests that early credits for compliance be allowed in any future complimentary fleet ZEV program. [RP1-208]

Agency Response: No changes were made to the regulation in response to this comment. Although this comment is outside the scope of this rulemaking, staff recognizes the value of early ZEV adoption by fleets and will look to encourage this in the future ZE fleet rules.

Future ZEV Policy – Award Fleets Credit for Using Low Carbon Fuels

Comment: Commenter states that many government fleets have already made significant investments in CARB's past alternative fuels programs and allowing Low Carbon Fuel Standard (LCFS) to be counted as offsetting emissions would take into account these previous investments. [RP1-44]

Comment: Commenter states that the rulemaking should facilitate the use of biodiesel and renewable diesel in those heavy-duty vehicle applications where the transition to electrification is not yet feasible. [RP1-85]

Comment: Commenter requests CARB to allow fleets using Low Carbon Fuel Standard fuels to be counted as offsetting emissions in future fleet rules. [RP1-181, RP1-255]

Comment: Commenter believes that, in their fleet of HD solid waste vehicles, a combination of near-zero NOx engines and renewable natural gas deserves recognition and credit within the proposed ACT regulation. Commenter points to their purchase of an anaerobic digester to produce their own renewable natural gas for use in their solid waste vehicles, citing SB 1383 and a \$3M grant from CEC to expand their digester's capacity. Commenter requests this RNG option be available for entities in direct control of solid waste or waste water treatment with obligations under SB 1383. Commenter

provides City of Roseville's Waste-to-RNG Facility pamphlet to support their point [RP1-312]

Agency Response: No changes were made to the regulation in response to these comments. ACT requires manufacturers to build ZEVs but does not require fleets to purchase ZEVs. As a result, it would be inappropriate to award fleets credit under this regulation. Additionally, emissions associated with new combustion-powered vehicles and engines are being addressed by other CARB programs including the approved Low NOx Omnibus regulation, which requires manufacturers to build engines that meet the Low NOx standards, and the existing Low Carbon Fuel Standard regulation. The LCFS regulation is already reducing lifecycle emissions from transportation fuels and the benefits resulting from that regulation cannot be claimed again as suggested by several commenters. The commenter's suggestions to include low NOx engines and low carbon fuels would only duplicate what is already expected from the LCFS and the low NOx Omnibus regulation and would not result in any new emission benefits for NOx nor GHG emissions beginning in 2024, as discussed further in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels".

Future ZEV Policy - Waste Stream Conversion

Comment: Commenter suggests allowing conversions of waste streams, such as biomethane, for use in their fleets as compliance pathways for entities with control over solid waste or wastewater treatment with obligations under the SLCP strategy. [RP1-202]

Agency Response: The approved regulation is a requirement for manufacturers to sell ZEVs into California and does not require any individual fleet to make ZEV purchases. This comment is outside the scope of the approved regulation. The comments pertain to fleet owners. Staff recommends the commenter participate in the public process for developing the Advanced Clean Fleets regulation to have their concerns addressed.

Emissions Methodology – Focus Needs to Be on VOC Reductions, Not NOx Reductions

Comment: Commenter states that the proposed ACT regulation will further delay California's ozone attainment by generating an even more imbalanced atmospheric NOx reduction largely due to California environmental policy shifting focus from reducing VOCs to reducing NOx. Commenter states that before adopting the proposed ACT regulation, the Board should re-examine why ozone violations increased in Southern California during the recession years (2009-2014), which reduced fuel sales by 2-4 billion gallons per year – the equivalent of replacing 5.7-10.5 million ICE vehicles with ZEVs statewide. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-86]

Agency Response: No changes were made to the regulation in response to this comment.

Ozone is formed through a complicated series of chemical reactions involving NO_x and VOCs in the presence of sunlight. Depending on the relative levels of NO_x and VOCs in the atmosphere, ozone can be more or less sensitive to changes in NO_x and/or VOC emissions. Under certain conditions, where NO_x emissions are high relative to VOC emissions, NO_x can suppress ozone formation and reducing NO_x can lead to higher ozone. This phenomenon can be observed in the “weekend effect” where ozone levels are enhanced on weekends owing to reduced heavy-duty truck activity and lower NO_x emissions. With continued NO_x reductions, the weekend effect becomes weaker and eventually becomes a reverse weekend effect, where reduced heavy-duty truck activity results in lower ozone on the weekend. This shifting relationship in ozone sensitivity to NO_x reductions has been observed in the South Coast over the last decade, where in the early 2010’s the majority of the basin exhibited a strong weekend effect. In contrast, the weekend effect is now much weaker everywhere in the basin and some parts of the basin have already begun exhibiting a reverse weekend effect, which points to the success of the NO_x focused control strategy. During this “transition” period, where the basin is shifting from a weekend effect to a reverse weekend effect, ozone becomes relatively insensitive to NO_x reductions until the NO_x reductions are sufficiently large to fully shift the region into a chemical regime consistent with a reverse weekend effect.

VOC reductions can also have an effect on ozone levels, particularly when a strong weekend effect is present. However, natural emissions of VOCs from plant life represent an uncontrollable source of VOCs that can exceed anthropogenic sources during summer months, when ozone levels are at their highest. Consequently, even if anthropogenic emissions of VOCs were reduced to zero, there would still be sufficient VOCs in the atmosphere to form enough ozone to exceed the ozone NAAQS at current NO_x levels. In addition, the non-linearity of ozone chemistry means that ozone formation becomes much less sensitive to changes in VOCs at the NO_x levels needed to meet the ozone NAAQS. All of this points to the need for a strongly focused NO_x strategy to attain the ozone NAAQS as expediently as possible.

VOC reductions in the near-term may offer some benefit, but in the long-term those same VOC reductions will have little to no effect on ozone levels as the basin nears attainment of the ozone NAAQS.

Emissions Methodology – ZEVs Produce No Benefits Versus Diesel and Natural Gas

Comment: Commenter states that CARB's analysis has errantly determined surplus ZEV criteria emission reductions versus diesel and gasoline. Commenter states that the “super-clean” diesel and natural gas vehicles sold today are far cleaner than CARB

assumed in their emissions analysis. ZEVs would need to be compared against these “super-clean” vehicles to generate surplus benefits.

Commenter states that today’s laboratory testing methods do not account for the fact that air contains pollutants. When accounting for this fact, commenter claims that “super-clean” diesel and natural gas vehicles produce negative emissions of VOCs, carbon monoxide, and PM₁₀.

In addition, commenter states that only 2-4 percent of PM_{2.5} emissions come from mobile sources and substantially more come from other sources. Commenter states that the ACT regulation will reduce PM emissions by 3-11 percent, while transitioning the fleet to “super-clean” diesel vehicles would reduce PM emissions by 38 percent. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-86]

Agency Response: No changes were made to the regulation in response to this comment. This comment mischaracterizes the staff analysis and raises several related issues described below.

The emissions analysis for the ACT regulation compared the regulatory proposal versus a baseline consisting of all currently adopted regulations. Because the ACT regulation affects new vehicles sold in California, the emissions of new ZEVs were compared against the emissions of new combustion-powered vehicles including gasoline, diesel, and natural gas fueled vehicles. The baseline assumes all new combustion-powered vehicles meet the applicable engine standard for heavy-duty vehicles or LEV III standards for medium-duty vehicles. While these combustion-powered vehicles are significantly cleaner than older vehicles, they remain a sizable portion of the state’s criteria and GHG inventories and further emissions reductions from these sectors are necessary.

The ACT regulation’s emission inventory analysis quantified NO_x, PM_{2.5}, and CO₂ emissions benefits. Staff did not quantify the emission benefits for VOCs, carbon monoxide, and PM₁₀ as new medium- and heavy-duty vehicles are not significant emission sources for these criteria pollutants. Medium- and heavy-duty vehicles are significant sources of NO_x and CO₂ emissions, neither of which were included in the commenter’s claims. The proposed ACT regulation will significantly reduce both NO_x and GHG emissions, serving to fulfill one of its objectives which is critical to meeting the state’s climate change and air quality goals.

Emissions testing is performed in accordance with 40 CFR § 1066.605. This calculation methodology explicitly includes and corrects for background pollutants contained within the air that reaches the analyzers. Staff is unaware of any studies, analyses, or reports which support the commenter’s claim of negative emissions by diesel powered vehicles. Commenter’s claim implies that the areas with the highest truck traffic would have the lowest emissions while in reality the opposite is generally true.

The commenter appears to be suggesting that the ACT rulemaking is unnecessary since “super- clean” diesel and natural gas vehicles are already on the road. But the commenter ignores the fact that the ACT rulemaking seeks to further reduce the existing emissions from these engines through the acceleration of the transition to zero emission vehicles. The claim that focusing on “super-clean” diesel and natural gas vehicles will generate additional PM benefits is erroneous as the baseline already assumes all vehicles sold will meet today’s engine standards as stated previously. Additionally, diesel vehicles produce diesel particulate matter which is comprised of black carbon and numerous organic compounds including over 40 known cancer-causing organic substances. While mobile sources comprise a small portion of the state’s PM emissions, they represent a significant portion of the state’s diesel PM inventory. ZEVs produce no tailpipe PM emissions and reduce brake wear PM due to regenerative braking.

Based on these facts and rationale, staff finds the ACT regulation’s emissions inventory analysis was appropriate in quantifying the emissions benefits of ZEVs versus the gasoline and diesel fueled baseline scenario.

Emissions Methodology – Analysis Overestimates Emissions Benefits of ZEVs

Comment: Commenter states that the ACT regulation does not properly account for the fact that MHD ZEVs provide no criteria pollutant reduction benefits until the MHD ZEVs provide greater than 97 percent of the daily vehicle miles traveled (VMT) of the new diesel counterpart displaced. Commenter states that based on the 2014 EMFAC criteria emission displacement break-even estimate, the ACT, if adopted, should only provide ZEV credits for MHD ZEVs used in applications and vocations that the ZEV can demonstrate, for the vehicle’s useful life, daily equivalent VMT to the displaced MHD internal combustion vehicle. CARB should properly account for the super-clean diesel vehicles’ minimized emissions, air-cleaning capacity in ambient air violation areas, and their greater population and greater miles driven then perform a comparison with MHD ZEVs to determine if “surplus” emission reductions do indeed occur. Commenter provided supporting documentation, articles, and references to support their comment. [RP1-86]

Agency Response: No changes were made to the regulation in response to this comment. As stated in chapter “Written Comments Received during the 30-Day Comment Period”, section “Emissions Methodology – Focus Needs to Be on VOC Reductions, Not NOx Reductions”, staff disagrees with the commenter’s assertion that “super-clean” diesel vehicles produce negative emissions. ZEVs produce zero tailpipe emissions while diesel vehicles produce criteria emissions as they operate, emission control systems periodically fail and deterioration occurs over the life of the engine, so on a tank-to-wheel basis, ZEVs produce emission benefits for every mile that they operate. In addition, ZEVs produce fewer upstream GHG emissions as well.

Furthermore, staff disagrees with the commenter's assertion that ZEVs will travel fewer miles than the vehicle they are replacing. Because the ACT regulation does not require fleets to purchase ZEVs, fleets will choose to purchase ZEVs in applications where they can make a one-for-one replacement with a gasoline or diesel-powered vehicle. Thus, the VMT should be identical as compared to existing conditions. In addition, manufacturers are already offering ZE straight trucks with over 200 miles of range and ZE tractors with over 500 miles or range, indicating that ZEVs will be able to fit into a wide variety of ZE applications. This indicates that ZEVs will be capable of fitting into most applications given most trucks travel fewer than 100 miles per day and most tractors that operate in California travel less than 200 miles per day.

Emissions Methodology – Comments on CARB's Calculation of Energy Efficiency Ratios

Comment: Commenter states that CARB mischaracterized the energy economy ratio (EER) for medium- and heavy-duty vehicles as being 2-5 times higher efficiency than their diesel counterparts on a tank-to-wheel basis. The correct energy economy characterization is that medium- and heavy-duty vehicles ZEVs have five to fifty percent higher energy efficiency on a well-to-wheels basis. Commenter states that CARB staff footnoted but do not appear to have incorporated the battery charger and round-trip battery losses in their EER calculation, graphics, and analysis. Accounting for the 15 percent battery and charger losses that CARB staff cite in Appendix G lowers ZEVs' EER to 1.7 - 4.25 EER. Further, including power plants 45% efficiency and 6.5% power line losses lowers CARB Staff's estimated EER to 1.1-1.8 (WTW). Commenter provided supporting documentation, articles, and references to support their comment. [RP1-86]

Agency Response: No changes were made to the regulation in response to this comment. This comment represents a misunderstanding on well-to-wheels emissions and how energy economy ratios (EERs) are determined.

Well-to-wheel emissions are accounted for in regulations (e.g., the LCFS regulation) by measuring the carbon intensity (CI) of fuels based on a life cycle assessment, typically expressed in the unit of gCO₂e/MJ. This is done by accounting for the emissions associated with production, distribution, and use of a fuel. CARB uses the CA-GREET model to determine the CI of fuels used in California. For diesel, the CI consists of the emissions associated with extracting, transporting, refining, distributing and using diesel. For electricity, the CI consists of the emissions associated with generating, transmitting and distributing electricity. Included in the CI of electricity are the emissions associated with producing and transporting fuels to the generation unit, if applicable.

Some vehicle technologies are more efficient than their gasoline or diesel counterpart because they can perform more work when given the same amount of energy. This is accounted for in the EER which is the ratio of efficiencies between the alternative fuel-vehicle combination and the baseline fuel-vehicle combination. For example, Figure 3 in Appendix G to the Staff Report illustrates the fuel efficiency of a tractor trailer using

diesel and electricity and calculates the EER between the two fuels on a variety of duty cycles. The EER solely represents the ratio of the amount of work performed (i.e., miles traveled) by the two different fuel-vehicle combinations for the same amount of energy (i.e., one diesel gallon equivalent) supplied to the vehicle in the fuel. Power plant efficiencies, transmission losses, and other similar factors are not in the scope for the EER determination as these factors are accounted for in the carbon intensity value of the electricity, just as crude oil extraction efficiencies and refining efficiencies are included in the carbon intensity of the diesel fuel. When properly calculated, the EER between diesel and electricity is shown in Figure 1 in Appendix G which displays the relationship between vehicle average speed and EER.

Lastly, even when accounting for upstream emissions associated with electricity production, BEVs have significantly lower well-to-wheel emissions. In the LCFS, the carbon intensity of ULSD (diesel) is 100.45 gCO₂/MJ, whereas the carbon intensity of California average grid electricity is 82.92 gCO₂e/MJ for the 2020 reporting year ([LCFS 2020 Grid Electricity CI link](#)). Roughly half of electricity generated within California came from zero-carbon sources including solar, wind, hydroelectricity, nuclear, and geothermal sources. Factoring in the EERs of the different fuel-vehicle combinations, the resulting EER-adjusted CI values are 100.45 gCO₂e/MJ for a Class 4-8 diesel-fueled vehicle versus 16.58 gCO₂e/MJ for a Class 4-8 battery-electric vehicle using California average grid electricity, representing an almost six-fold reduction in emissions on a per mile traveled basis. Further, using electricity from lower carbon sources (like solar, wind, etc.) for charging a battery-electric truck will significantly increase the emission benefits on a per mile traveled basis.

Emissions Methodology – Lacking Greenhouse Gas Benefits

Comment: Commenter states staff's analysis shows the regulation will not result in greenhouse gas (GHG) emissions reductions until 2028 and starts at 0.1 MMT/yr. Commenter states this is inconsistent with the goals staff has outlined for the regulation; other technologies, such as natural gas, could generate greater GHG emissions benefits. [RP1-228]

Agency Response: No changes were made to the regulation in response to this comment. This comment indicates that the commenter does not fully understand the emissions accounting methodology used in this rulemaking action.

US EPA and California have both adopted Phase 2 GHG regulations which require medium- and heavy-duty manufacturers to meet increasingly more stringent GHG emissions. The Phase 2 GHG regulation allows manufacturers to build ZEVs and use these vehicles to meet their overall GHG requirements. Because of this, CARB does not claim GHG benefits for the ACT regulation until the number of ZEVs required exceed the number of ZEVs needed for Phase 2 GHG compliance. Accordingly, CARB only claims GHG benefits under the ACT regulation after the ZEV sales percentage of medium- and heavy-duty vehicles exceeds 20%. This methodology avoids double-

counting benefits between the ACT and Phase 2 GHG regulations, although it may be too conservative in a scenario where a manufacturer decides to build ZEVs for ACT and meet the Phase 2 GHG requirements with only their combustion-powered fleet.

In a scenario where CARB was requiring fleets to transition to renewable natural gas as the commenter is suggesting, CARB would be unable to claim any GHG benefits. The GHG benefit from switching from diesel to fossil natural gas would be accounted for in the Phase 2 GHG regulation, and all GHG benefits associated with using renewable natural gas over fossil natural gas would be accounted for in the LCFS regulation. Therefore, requiring fleets to transition to renewable natural gas would generate zero GHG emission benefits.

Emissions Methodology – Lack of Urgency for Air Quality Benefits

Comment: Commenter states that the cost benefit analysis and Table II-3 shows a lack of urgency related to air quality issues. Commenter asks what is CARB doing to address the air quality issues between now and when the ACT is implemented? [RP1-228]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation requires manufacturers to start selling ZEVs beginning with the 2024 MY. In addition to its dozens of programs addressing air quality issues from multiple sources throughout the state, in the context of medium and heavy duty vehicle emissions, the Board recently approved the Low NOx Omnibus regulation which sets lower standards for manufacturers beginning in the 2024 model year with a further reduction of the standard in 2027 MY. Through these two regulations, CARB is reducing the emissions of new heavy-duty and medium-duty trucks as quickly as feasible by encouraging zero-emission where feasible, and the cleanest combustion possible everywhere else. However, because both of these regulations only address new sales, there is a limit to the level of potential emissions reductions as they cannot address vehicles sold prior to the rules' adoption. Generating further emission reductions will require fleet requirements to incorporate cleaner vehicles into fleets. Staff will work on this action in the upcoming ZE fleet rule.

Staff notes that because the ACT regulation is a manufacturer requirement, some lead time is necessary for the manufacturers to give manufacturers ample time to address any technological and supply hurdles required to achieve compliance with the new sales requirements. What this means is that setting requirements before 2024 would be overly burdensome because it wouldn't allow adequate time for manufacturers to meet the new ZEV sales requirements under the ACT regulation. Providing optional early action credits would not generate additional emission reductions as the commenter contends because there is neither a regulatory requirement to provide optional credits. Therefore, the ACT regulation is not designed to provide benefits until after the rule begins in 2024 regardless of the technologies included.

Requiring fleets to turnover their vehicles is outside the scope of this manufacturer-focused rulemaking.

Emissions Methodology – Inconsistency in Emissions Accounting

Comment: Commenter states CARB has not considered the quantities of NO_x and PM_{2.5} emission reductions claimed by the Low Carbon Fuel Standard program through 2030 and recommends that staff address this gap in its inventory baseline for the ACT regulation. [RP1-272]

Agency Response: No changes were made to the regulation in response to this comment. Attachment H to the Second 15-Day Modifications to the 2018 LCFS amendments state “An increase in electricity, hydrogen, natural gas, and propane use for transportation is also expected to take place. Increased use of these fuels is primarily dependent upon adoption rates for alternative-fueled vehicles, and therefore, despite the value created for these fuels by the LCFS, staff assigns the air quality benefits of these increases to the ZEV regulation and other vehicle incentive programs and not to the LCFS amendments.” Based on this statement, there is no inconsistency between the methodology used in the 2018 LCFS amendments and the ACT rulemaking.

As outlined in Appendix G for the 2018 LCFS Amendments, emissions reductions from switching to vehicles powered by grid electricity or 33% renewable hydrogen are attributed to the regulation or incentive that caused the fuel switch. The LCFS regulation claims incremental credit for vehicles fueled using electricity cleaner than the grid or hydrogen that is more than 33% renewable.

Emissions Methodology – Include Upstream Criteria Pollutants

Comment: Commenter states that the ACT regulation’s impact analysis excludes well-to-tank criteria emissions, and states that the rationale for this assumption should be added. [RP1-284]

Agency Response: No changes were made to the regulation in response to this comment. Staff provided an analysis in Chapter VI of the Staff Report of the estimated well-to-wheel GHG emission reductions versus the baseline scenario of GHG emission reductions without the ACT regulation in place. This included both an upstream and downstream emissions analysis.

For criteria emissions, the situation is different than for GHG, which resulted in a different methodology. First, NO_x and PM_{2.5} are regional pollutants. Upstream sources of NO_x within California such as power plants are regulated separately as stationary sources, so including their emissions again would be double-counting. In addition, upstream emissions sources are not necessarily located where vehicles are operating. For example, electricity imported from outside of California will not have a criteria emissions impact for vehicles operating within California. Lastly, legislation such as SB350 and SB100 are transitioning the state’s grid to renewable, zero-emission

electricity. This transition will decrease upstream emissions. For these reasons, an upstream criteria emissions reduction is unnecessary and counterproductive to assessing the emissions benefits of the ACT regulation.

Emissions Methodology – Brake Wear and Tailpipe Particulate Matter Should Be Separated

Comment: Commenter states tailpipe emissions should be separated from brake wear. [RP1-247]

Agency Response: No changes were made to the regulation in response to this comment. Staff included the combined PM_{2.5} emissions both from the tailpipe and from brake wear since both are criteria emissions, regardless of their source.

Emissions Methodology – Omnibus Interaction Upstream Emissions

Comment: Commenter states that the ACT regulation should require upstream emission accounting for GHG and criteria emissions from upstream electricity generation because without it, it poses a problem for the Averaging, Banking and Trading (ABT) program for the HD Low NOx Omnibus rulemaking. [RP1-205]

Agency Response: No changes were made in response to this comment. See discussion on why staff did not perform upstream criteria emissions accounting in chapter “Written Comments Received during the 30-Day Comment Period”, section “Emissions Methodology – Include Upstream Criteria Pollutants”. Also, it is outside of the scope of this rulemaking to assess emissions impacts that may result from another rulemaking.

Out of Scope – Incentives and Funding Policy

Comment: Commenter would like to share his support for clean air vehicles and would like to ask for incentives for clean air vehicles for truck owners like individuals receive. [RP1-13-Form-3374]

Comment: Commenter asks if incentives could be provided to a manufacturer for engines that only have NOx emissions during engine start-up? [RP1-16]

Comment: Commenter requests CARB move forward with funding for infrastructure to support electric vehicle rollout. [RP1-66]

Comment: Commenter states there needs to be incentives for the purchase of electric trucks. [RP1-141, RP1-191, RP1-260-Form-2129, RP1-260-Form-4164]

Comment: Commenter states incentives should be available for people who want to switch, but they do not support the forced transition to ZEVs. [RP1-154]

Comment: Commenter states that the revised ACT regulation should not be enacted due to the current economy because there are insufficient funds for incentives. [RP1-169]

Comment: Commenter states their support for continued and increased investment in heavy-duty ZEVs and NZEVs which are essential for motor vehicle suppliers' research and development. Commenter states that the ACT regulation should provide incentives from state public procurement programs to support the development of ZEVs and NZEVs, as well as vehicle purchase premiums. [RP1-205]

Comment: Commenter states that stakeholders will not comply with the ACT regulation without incentives. [RP1-213-Form-814]

Comment: Commenter states that CARB should provide assistance for phasing out polluting vehicles. [RP1-213-Form-1100]

Comment: Commenter states that purchase incentives must be available until such time as HD ZEV actual in-use total costs of operation have reached parity with ICE-powered vehicles. [RP1-214]

Comment: Commenter states the increased cost to purchase and operate ZEVs need to be offset by government funded incentives until life-cycle costs of ZE trucks are lower than costs associated with traditional vehicles. [RP1-218]

Comment: Commenter states that the EV projects being implemented were only possible due to the availability of multiple local, state, and federal incentives. Commenter states that the current prices of Class 6-8 vehicles are 3-5 times higher than traditional vehicle costs and are not economically feasible without incentives. Commenter states that to become an economically self-sustaining marketplace will require significant grant funding to assist in the development, demonstration, and deployment of cost competitive technologies and charging models. [RP1-244]

Comment: Commenter states that the ACT regulation needs incentives for fleet owners in order to be successful. [RP1-249]

Comment: Commenter states that we need to seek funding from the state and federal government for the ACT regulation. [RP1-260-Form-3583]

Comment: Commenter states we need to include financial help for truck drivers in the rule. [RP1-260-Form-2197]

Comment: Commenter suggests creating an incentive ramp up to the rule for the capital and infrastructure costs. [RP1-265]

Comment: Commenter states incentives from CARB & CEC are necessary for ACT success. [RP1-281]

Comment: Commenter recommends ensuring incentive funding availability. [RP1-284]

Comment: Commenter states there needs to be incentives for manufacturers to produce ZEVs. [RP1-296]

Comment: Commenter states that the ACT regulation needs to expand the network of charging stations and fund this through increased fees on gas powered trucks. [RP1-114]

Agency Response: No changes were made to the regulation in response to these comments. See discussion about the availability of incentive programs in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Incentive and Funding Policies”.

Out of Scope – Pollution Tax

Comment: Commenter states that we should impose a pollution tax on polluting vehicles based on miles driven and the level of the pollutants emitted in order to give more people the incentive to switch to ZEVs. [RP1-260-Form-458]

Agency Response: No changes were made to the regulation in response to this comments. See discussion on the taxes in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Carbon Tax”

Out of Scope – Require Zero-Emission Yard Equipment

Comment: Commenter states CARB should also make all yard maintenance equipment electric as well. [RP1-260-Form-1739]

Agency Response: This comment is outside the scope of this regulation. The ACT regulation focuses on on-road medium- and heavy-duty vehicles; therefore, off-road yard maintenance equipment is outside the scope of the regulation.

Out of Scope – Issues Regarding SCE Rule 18

Comment: Commenter states that staff’s cost analysis does not acknowledge CPUC rules (known as Rule 18 in SCE), which excludes private enterprise from infrastructure/refueling by preventing resale of electricity. [RP1-106]

Agency Response: No changes were made to the regulation in response to this comment. The commenter’s issue is outside of the scope of CARB’s authority. In the past, the CPUC has modified their rules to allow the resale of electricity for light-duty EV charging. In September 2020, the CPUC approved a decision allowing resale of electricity for medium-duty, heavy-duty, and off-road applications making this comment null and void. Broadly, commentary on sister agency policy should be presented to the relevant agency rather than on a different regulatory item.

Out of Scope – Use Rail Instead of Trucks

Comment: Commenter states that we should transport everything by rail and not use trucks. [RP1-260-Form-4701]

Comment: Commenter states we should focus on the implementation of electric trains for people to commute to work and leave the truckers alone. [RP1-260-Form-3526]

Agency Response: This comment is outside the scope of this regulation. Trucks and trains are both components of California’s freight system and serve different purposes. California is taking action to reduce the emissions of both trucks and trains.

Out of Scope – Ban Other Dirty Emission Sources

Comment: Commenter states that the ACT regulation needs to include: coal and oil mining reduced to nearly zero by 2029, zero petroleum use by 2030, all nuclear plants shut down by 2022, zero fracking by 2022, and zero synthetic chemical farming by 2023. [RP1-260-Form-2024]

Agency Response: This comment is outside the scope of this regulation. Staff appreciates the comment.

Out of Scope - Encourage Public Transit

Comment: Commenter states CARB should encourage the use of public transportation to reduce air pollution. [RP1-260-Form-1599]

Agency Response: This comment is outside the scope of this regulation. Staff appreciates the comment.

Other - Higher Transportation Cost

Comment: Commenter states they would like to know if the transition to ZEVs will result in a higher transportation cost. [RP1-260-Form-3718]

Comment: Commenter states CARB's efforts are trying to fix something that isn't broken. Commenter states all of the efforts from CARB to clean the air are causing the price of vehicle related items to increase. Commenter states that CARB is causing more financial hardships for truckers. [RP1-260-Form-2778]

Agency Response: No changes were made to the regulation in response to these comments. If commenter is referring to goods movement, staff modeled the costs and benefits of the required numbers of ZEVs in the SRIA, Staff Report, and Attachment C to the “Proposed Amendments to the Proposed ACT Regulation” document released for public comment in April 28, 2020. The regulation is anticipated to resulting in a net cost savings to California of \$5.9 billion indicating a net savings to the state’s trucking fleet and as a result, the California economy. In addition, because this is a manufacturer mandate, fleets do not have a requirement to purchase ZEVs and would only do so if it made financial sense for them.

Other - Add Lion Vehicles to HVIP

Comment: Commenter states that they would like Lion's zero-emission Class 4-8 trucks and Class 7-8 tractors to be added to CARB’s Attachment B to the Modified Proposal as vehicles currently available. [RP1-140]

Agency Response: No changes were made to the regulation in response to this comment. Staff were not aware of Lion’s vehicles at the time the Modified Proposal was released, and will add them in market analysis used to support future rulemakings.

Other – No Market-Based Pollution Approach

Comment: Commenter states that California does not need market-based solutions to address pollution so that corporations can pay their way out of environmental responsibility. [RP1-316]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation requires manufacturers to either produce and sell ZEVs and NZEVs, or purchase credits from another manufacturer. This structure ensures that regardless of the actions of any individual manufacturer, zero-emission vehicles will be sold into California. The regulation’s structure gives the needed amount of flexibility to manufacturers to produce battery-electric, hydrogen fuel cell, or plug-in hybrid technologies, but sets firm requirements that manufacturers sell cleaner technologies as there are no other compliance options available to them. In addition, manufacturers who do not meet its requirements cannot “pay-to-pollute” as described in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – No Pay-to-Pollute Penalties”. Therefore, while the ACT regulation could be described as a “market-based regulation” since it allows credit trading, the safeguards embedded within the regulation ensure that there is no way to avoid its requirements or pay to avoid compliance.

Other – Comments Addressed in the Environmental Analysis

Comment: Commenter states disposal of dead batteries need to be addressed. [RP1-13-Form-1296]

Comment: Commenter states we cannot go forward with the ACT regulation until the problems with electric vehicles are addressed. Commenter states children are enslaved to dig up the minerals needed for ZEVs, the process to make the batteries are polluting toxins, how to dispose of the batteries, and asks where the additional power comes from. Commenter states the additional power needed for ZEVs cannot come from hydrogen power because it is too overtaxed, and it can’t be nuclear because it’s too dangerous and polluting. [RP1-260-Form-1812]

Agency Response: These comments are addressed in the “Final Environmental Analysis” document. See the Final Environmental Analysis prepared for the ACT regulation ([Final EA link](#)) presented and approved by the Board at the June 25, 2020 hearing.

Other – Comments Addressed in the Environmental Response

Comment: Commenter states that the State of CA has violated CEQA by not studying reductions in VMT, which is an alternative to emission reduction strategies. [RP1-28]

Comment: Commenter states that the manufacturing impacts of COVID-19 were not addressed in the Draft EA. In addition, commenter states the draft EA does not display evidence to support that SB 350 and its affected utilities can or will meet the fleet end users infrastructure needs and that “most or all of the costs” needed for a fleet end user to enable ZEV deployments will be satisfied through SB 350 funds. [RP1-145]

Comment: Commenter wants to know where the lithium batteries will be disposed and if CARB will be liable for the children mining the lithium. [RP1-260-Form-3526]

Agency Response: These comments are addressed in the “Environmental Response to Comments” document. See Response to Comments on Final Environmental Analysis prepared for the ACT regulation ([Response to Comments link](#)) presented and approved by the Board at the June 25, 2020 hearing.

Other – Additional Revisions May Be Needed to Achieve Carbon Neutrality

Comment: Commenter provided results from their Freight Action Climate Consistent model to compare the updated ZEV sales percentage schedule to the original proposal and also compares both scenarios against a "climate-consistent" scenario (which aligns with broader 2045 carbon-neutrality goals). The model indicates that the revised proposal will reduce emissions by 54% instead of 36% compared to 2019 levels, however, future revisions to the ACT regulation may be needed to meet carbon neutrality goals. In addition, the model indicates \$11 billion in savings over the original proposal, a "climate consistent" ACT proposal would provide an additional \$23 billion in savings. Finally, ICE truck populations are modeled which indicate the updated ACT standards show marked improvement, with all classes showing a significant decrease in gas and diesel truck populations. In contrast however, the climate-consistent scenario which necessitates 100% ZEV sales by 2030 across all truck classes would lead to further decreases. [RP1-148]

Agency Response: No changes were made to the regulation in response to this comment. Staff thanks commenter for including the analysis and will consider the information in future actions.

Other – Share Lessons Learned

Comment: Commenter recommends CARB share lessons learned with public agencies and fleets outside of California. [RP1-294]

Agency Response: No changes were made to the regulation in response to this comment. Staff has already made commitments (and will continue to do so) with other State agencies and companies to promote widespread transportation electrification including those outside of California.

Other – Miscellaneous/Outside the Scope Comments

Comment: Commenter states CARB is using COVID-19 to manipulate the ACT agenda. [RP1-260-Form-3526]

Comment: Commenter states the elected officials should take a stand against Amazon and transportation companies that have a history of alleged nefarious business practices in regards to air pollution. [RP1-317]

Comment: Commenter states that CARB should address wood burning in homes. [RP1-13-Form-992]

Comment: Commenter states CARB should make a short-lived climate pollutant reduction strategy and support new green job infrastructures. [RP1-233]

Comment: Commenter states the switch to ZEVs by acquiring resources should not exploit indigenous lands. [RP1-245]

Comment: Commenter states that citizens should adopt a vegan diet to reduce methane emissions and improve the environment. [RP1-213-Form-815]

Comment: Commenter states CARB needs to promote solar energy programs. [RP1-260-Form-3944]

Comment: Commenter states that every home in the country should have solar panels and the energy harnessed from those would power all of the ZEVs. [RP1-260-Form-2088]

Comment: Commenter states we need trucks powered by solar and wind. [RP1-260-Form-2387]

Comment: Commenter states CARB needs to take action to also clean up all water sources and make higher fines for over fishing. [RP1-260-Form-2015]

Agency Response: No changes were made to the regulation in response to these comments. These comments were determined to be outside the scope of this regulation.

Duplicate - Resubmittal of Comments at First Board Hearing

Comment: Commenter resubmits comments submitted on December 12, 2019, as an attachment for the record and for the Board's additional consideration. [RP1-195]

Agency Response: No changes were made to the regulation in response to this comment. To re-address commenter B1-16's original comments, please see the discussion about the TCO of pickups, new information since the original Staff Report, and the role TCO plays in the approved regulation in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Total Cost of Ownership Concerns for Pickups". Additionally, see discussion related to incentives, infrastructure, and fleet purchase requirements in chapter "Comments

Received During Original Proposal’s 45-Day Comment Period”, sections “Out of Scope – Incentive and Funding Policies”, “Manufacturer ZEV Sales – Infrastructure Concerns”, and “Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements”, respectively.

WRITTEN COMMENTS RECEIVED DURING THE JUNE 2020 BOARD HEARING

Manufacturer ZEV Sales - General Support

Comment: Commenter states general support for the proposed changes to the regulation. [B2-01, B2-02, B2-03, B2-04, B2-05, B2-06, B2-07, B2-09, B2-11, B2-12, B2-13, B2-14, B2-15, B2-16, B2-17, B2-18, B2-20, B2-21, B2-22, B2-23-Form, B2-26, B2-28, B2-29, B2-30, B2-31, B2-32, B2-33, B2-34, B2-35, B2-36, B2-37, B2-38, B2-41, B2-42, B2-43, B2-44, B2-45, B2-48, B2-49, B2-50, B2-52, B2-53, B2-54, B2-55, B2-56, B2-57, B2-59, B2-60, B2-61, B2-62, B2-63, B2-64, B2-65, B2-66, B2-67, B2-68, B2-69, B2-70, B2-71, B2-72, B2-73, B2-74, B2-75, B2-76, B2-77, B2-78, B2-79, B2-80, B2-81, B2-82, B2-83, B2-84, B2-85, B2-86, B2-88, B2-89, B2-90, B2-91, B2-92, B2-93, B2-94, B2-95, B2-96, B2-97, B2-98, B2-99, B2-100, B2-101, B2-102, B2-103, B2-104, B2-105, B2-106, B2-107, B2-108, B2-109, B2-111, B2-112, B2-113, B2-114, B2-115, B2-116, B2-117]

Comment: Commenter states support for the proposed changes and that the regulation is a step towards racial justice because communities of color are disproportionately affected by pollution because their neighborhoods are closer to freeways. [B2-47]

Agency Response: Staff appreciates the supportive comments. Additional issues raised by commenters, if any, will be addressed in the applicable sections.

Manufacturer ZEV Sales - Strengthen the ACT Proposal by Including Other Vehicles, Starting Requirements Earlier, and/or Increasing Sales Percentage Requirements

Comment: Commenter is urging CARB to strengthen the ACT Regulation. Commenter believes that CARB should look at both short-term and long-term strategies where zero-emission trucks should be the goal as soon as possible and as a part of the long-term strategy. [B2-10]

Comment: Commenter states their support for a stronger ACT regulation by increasing the mandate as much and as quickly as possible. [B2-17, B2-39, B2-23-Form-4151]

Comment: Commenter states that the timeline for the ACT regulation should be sped up to make ZEVs happen right away. [B2-23-Form-1162]

Comment: Commenter states we need to find a way to get more vehicles electric, not just trucks. [B2-23-Form-1467]

Comment: Commenter states that California should be encouraging electrification for all modes of transportation. [B2-23-Form-3208]

Comment: Commenter states that the ACT regulation should require ZEVs by 2023. [B2-23-Form-3685]

Comment: Commenter states that the ACT regulation should apply to all motor vehicles. [B2-23-Form-4195]

Comment: Commenter states to convert all trucks to electric. [B2-27]

Comment: Commenter states their support for a stronger ACT regulation for heavy-duty class 7-8 trucks and to increase the sales requirement for heavy-duty trucks as high as possible. [B2-31]

Comment: Commenter states they support the electrification of all vehicles and the charging infrastructure to be powered by solar. Commenter states that areas with historically higher pollution and mining operations should take priority. [B2-87]

Agency Response: No changes were made to the regulation in response to these comments. Several challenges currently prevent more aggressive requirements. Staff will evaluate how the zero-emission market develops and can propose modifications in the future to reflect what is feasible. See further discussion on staff's rationale for the regulation's requirements and limitations to increasing the requirements more than staff already did in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements".

Manufacturer ZEV Sales – Manufacturer Requirements Are Too Stringent

Comment: Commenter shares their support for a less aggressive approach to implementing the ACT regulation and its reporting requirements due to financial impacts on businesses and consumers. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. See staff discussion on why the ACT regulation is aggressive and how we plan to meet the states air quality and climate goals in chapter "Written Comments Received during the 30-Day Comment Period", section "Manufacturer ZEV Sales – Manufacturer Requirements Are Too Stringent".

Manufacturer ZEV Sales – Near-Zero-Emissions Vehicle Definition

Comment: Commenter believes that on-road Low NOx medium- or heavy-duty vehicle powered by an engine that is certified to CARB's Optional Low NOx standard of 0.02g/bhp-hr should be considered in the near-zero definition. [B2-10]

Agency Response: No changes were made to the regulation in response to this comment. See response summarizing how the term “near-zero-emission vehicle” is not appropriate to apply to vehicles meeting the upcoming Low NOx engine standard in chapter “Written Comments Submitted During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Near-Zero-Emissions Vehicle Definition”.

Manufacturer ZEV Sales - Increasing Class 2b-3 and Pickup Requirements Too Costly

Comment: Commenter states that removing the pick-up truck exemption, and accelerating the implementation of ZEVs by 2024 will be too costly for businesses that are dealing with the financial impact of COVID-19. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes the economic impact of the COVID-19 pandemic and its impact on the trucking industry. However, for a number of reasons, staff finds that the regulation’s requirements are feasible in spite of this. The ACT regulation does not place any requirements until 2024 MY, giving manufactures time to plan and position themselves for the rule’s requirements. Further details may be found in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”. As detailed in Attachment B to the “Notice of Public Availability of Modified text and Availability of Additional Documents and Information” for the ACT regulation, released in April 2020 for public comment, staff moved the requirements for Class 2b-3 vehicles forward one year without changing the start date and removed the pickup truck exemption. The inclusion of Class 2b-3 pickup trucks in 2024 is supported by new information in recent market announcements showing that a number of zero-emission pickup and additional van models will be commercially available from several manufacturers well before the 2024 model year. See further discussion of staff’s rationale for increasing manufacturer’s sales requirements for Class 2b-3 vehicles in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales – Delay Until 2026

Comment: Commenter proposes that the sales mandate begin in 2026 to allow time for staff to develop and implement the promised fleet rule, develop the necessary charging infrastructure, for the state to recover from current budget crisis and to allocate incentive funds, and time for manufacturers to recover from the impacts of the COVID crisis and recession. [B2-11]

Agency Response: No changes were made to the regulation in response to this comment. See response detailing why impacts from the COVID-19 pandemic will not affect this regulation in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”.

Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements

Comment: Commenter proposes that staff fully link the ZEV sales mandate with ZEV purchase requirements. [B2-11]

Agency Response: No changes were made to the regulation in response to this comment. See staff response detailing the next rulemaking effort for fleets in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements”.

Manufacturer ZEV Sales – Add Off-Ramps to the Proposal Due to COVID-19

Comment: Commenter believes a provision should be incorporated into the regulation to ensure, related to the impacts of COVID-19 on the trucking and truck manufacturing industries, truck manufacturers aren’t deemed non-compliant for not reaching vehicle sales totals beyond those which can be achieved with limited, disconnected public funding for vehicles and infrastructure, as well as the long lead times for the charging infrastructure installation. [B2-08]

Agency Response: No changes were made to the regulation in response to this comment. See response detailing considerations for the impacts for COVID-19 in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”. Additionally, see response summarizing how off-ramps fail to add regulatory certainty in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Add Off-Ramps to the Proposal”.

Manufacturer ZEV Sales – Ban Internal Combustion Engines

Comment: Commenter states that only ZEVs should be allowed to operate in California and if out-of-state and federal fleets do not abide, then trucks can trans-ship at the state border. [B2-23-Form-3797]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about why staff is not proposing a combustion engine ban in this rulemaking due to varied suitability of vehicle use cases to transition to ZEVs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Ban Internal Combustion Engines”.

Manufacturer ZEV Sales – Pollution Tax Instead of Sales Mandate

Comment: Commenter states the transition to clean engines should be driven by setting annually increasing pollution taxes based on miles driven and how much pollution they emit. [B2-23-Form-5242]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about CARB’s inability to levy taxes and other policies in place that are reducing the number of polluting engines on the road in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Carbon Tax”.

Manufacturer ZEV Sales - Alternative Fuels Instead of ZEV Sales Mandate

Comment: Commenter states the ACT regulation could accomplish the reduction of pollution by transitioning to an alternative fuel, and not forcing electric vehicles. [B2-23-Form-5400]

Agency Response: No changes were made to the regulation in response to this comment. The primary objectives of the ACT regulation include accelerating the use of zero-emission vehicles in California. Vehicle emissions associated with combustion-powered vehicles and engines are being addressed in the approved Low NOx Omnibus rulemaking and existing cleaner fuels policies. Further detail are found in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels”.

Manufacturer ZEV Sales – ACT Targets ZEV Replacements for all Class 2b-3 in CA

Comment: Commenter states that there is a disconnect between stated objectives and its proposed application. Commenter points out that while the ACT regulation states it applies to fleets, objectives in ongoing presentations and assessments speak directly to targeting ZEV replacements for the 1.04 million Class 2b-3 vehicles on California’s roads. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. The Board directed staff, through the approved Resolution, to begin regulatory development for turning over certain trucking sectors to 100% ZEVs by certain dates in California, but none of those sectors are comprised entirely of Class 2b-3 vehicles. See further discussion of staff’s rationale for increasing manufacturer’s sales requirements for Class 2b-3 vehicles in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”.

Manufacturer ZEV Sales - Infrastructure Concerns

Comment: Commenter states that businesses and taxpayers will bear the brunt of the costs associated with infrastructure and maintenance. [B2-58]

Comment: Commenter also states that infrastructure and market deficiencies are obstacles to successful development. [B2-58]

Comment: Commenter states that the charging infrastructure should be included in the ACT regulation. [B2-102]

Agency Response: No changes were made to the regulation in response to these comments. See staff discussion about infrastructure costs taken into consideration in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Regulation Does Not Address Infrastructure Challenges”. Additionally, see discussion about current efforts to develop widespread infrastructure, including funding available, in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Infrastructure Concerns”.

Economic Analysis – Cost Analysis Underestimates Vehicle Cost

Comment: Commenter states estimated costs of suitable replacements (Tesla’s 500-mile, \$70K [pickup]) are prohibitive and do not reflect assumptions in CARB’s market assessment. Commenter provided supporting documentation, articles, and references to support their comment. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about the higher upfront cost of ZEVs that may decrease over time in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Cost Analysis Underestimates Vehicle Cost”.

Economic Analysis – Independent Review

Comment: Commenter states that the infrastructure and electric utility costs require an independent review and deeper analysis of the ACT regulation’s impact on businesses and consumers. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. As described in the Staff Report, the economic impacts to businesses and consumers was thoroughly analyzed. In the analysis, all costs including the incremental vehicle costs, infrastructure upgrades, fueling, maintenance, and other costs are assumed to be the direct costs of the regulation in California despite the lack of a specific fleet purchase requirement. Staff determined that the ACT Regulation will reduce costs to the overall state’s trucking fleet as the operational cost savings of the ZEVs outweigh the potential infrastructure and vehicle prices. Amortizing the vehicle and infrastructure help with these company’s cash-flow so they can have positive cash-flow shortly after purchase. Staff also determined that ZEVs are 2 to 5 times as efficient as similar vehicles with internal combustion engines technologies and significantly reduce petroleum and other fossil fuel use and use less total energy. Battery-electric fuel prices depend on how they are charged and include energy costs, fixed fees and demand fees. Vehicles charged at high power or during peak periods will have higher electricity costs than if charging overnight over an extended period.

Additionally, electricity and hydrogen are eligible to earn LCFS credits which can be sold and used to offset the costs of electric and hydrogen fuels.

Economic Analysis – Rural Infrastructure Cost Impact Not Analyzed

Comment: The commenter states that there should be further analysis of the infrastructure cost impact on rural areas, due to the difficulty to maintain charging stations these environments. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. Staff incorporated infrastructure cost impacts in the statewide economic analysis, which includes rural areas, detailed in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Regulation Does Not Address Infrastructure Challenges”.

Economic Analysis – Incorporate ZANZEFF Experiences for More Realistic Cost and Timeline Assumptions

Comment: Commenter recommends that CARB and other state agencies incorporate into the regulation lessons learned about realistic project timelines and cost estimates from ZANZEFF-funded projects. [B2-08]

Agency Response: No changes were made to the regulation in response to this comment. Staff took into account all information available at the time to draft the regulation and will continue to incorporate new information during the implementation stage as it becomes available. For additional information, please see chapter “Comments Received During Original Proposal’s 45-Day Comment Period” section “Manufacturer ZEV Sales – Wait for Results of Demonstrations”.

Economic Analysis – Underestimated Time Needed for Fleets to Plan for Replacements

Comment: Commenter states that zero-emissions models won’t hit the market until maybe a year or two before the requirement takes effect which leaves little opportunity for cost consideration in planning vehicle and fleet replacements. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation does not require fleets to purchase ZEVs. It requires manufacturers to sell ZEVs, and it will ensure that manufacturers develop competitive ZEV products at price points that will meet fleet needs. Manufacturers will need to ensure that fleets are prepared to accept ZEVs into their fleets by communicating when their ZE products will become available and ensuring fleets are aware of potential issues such as infrastructure and technician training. The ACT regulation gives manufacturers lead time to both prepare their products and help prepare the overall marketplace for acceptance of ZEVs, both of which are necessary for a successful rollout.

Economic Analysis – Fleet Infrastructure Resilience

Comment: Commenter states that resiliency is not addressed in the TCO. Commenter states that one day of resiliency through battery storage for a fleet would require a 6 MWh battery system costing approximately \$3M; and vehicles are backed up with a 700 kW diesel or NG genset which would cost \$500k-\$1M. [B2-40]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on the work California is undertaking to bolster resilience and the role of ZEVs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Fleet Infrastructure Resilience”.

Economic Analysis – Impact of COVID-19

Comment: Commenter states that CARB should consider the timing of the ACT regulation due to COVID-19 which has put many people out of work and disrupted truck distribution. [B2-23-Form-5400]

Comment: Commenter states she does not support the ACT regulation because it puts a financial burden on truck drivers after going through COVID-19. [B2-23-Form-2194]

Comment: Commenter doubts the market’s readiness to absorb the volumes proposed in this regulation due to the economic impacts of COVID-19 which have reduced product development budgets for manufacturer’s and reduced carbon auction revenue (HVIP funding) to support ZEV sales. [B2-08]

Agency Response: No changes were made to the regulation in response to these comments. See response detailing why COVID-19 does not affect staff’s analysis in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”.

Economic Analysis – Long Range Pickups Not Addressed

Comment: Commenter states Class 2b-3 pickups and their associated longer-range needs are not addressed in the TCO. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. Staff updated the cost benefit and analysis in Attachment C to the “Notice of Public Availability of Modified text and Availability of Additional Documents and Information” for the ACT regulation, released in the April 2020 30-day public comment period, to include long-range Class 2b-3 vehicle sales. See the Attachment C for additional details about how the cost calculations were updated to account for these types of vehicle sales for the increased Class 2b-3 requirements.

Economic Analysis – Multi-Shift Operation Impacts on Infrastructure Cost

Comment: Commenter states that staff based the TCO model on nearly idealized assumptions about the operation of fleets, specifically that trucks can charge overnight at their home base. However, the model would have to be extensively revised to capture the impacts on a two-shift fleet, in particular, reassessing the infrastructure and electricity costs. [B2-40]

Agency Response: No changes were made to the regulation in response to this comment. As described in Appendix E, the only segments where multishift operations are common is in regional and long-haul trucking with tractors. Multi shift operations grade poorly due to the high-power needs and short time between shifts necessitating high-power charging. The lower grading for these segments has been reflect in the lower percentage requirements in the Class 7-8 tractor category versus other segments.

The ACT regulation does not contain a requirement that fleets purchase ZEVs. Therefore, there is no requirement that fleets with multishift operations would need to purchase ZEVs unsuited for their application. Because there is no mandate that fleets purchase ZEVs, there is no reason to assume manufacturers will sell vehicles into categories where they are unsuited. Some manufacturers have indicated that multi shift operations may enable higher cost savings for fleets and are targeting this segment.

Lastly, staff's definition of zero-emission includes both battery-electric and hydrogen fuel cell vehicles. While battery-electric vehicles may not be ideal for multi shift operations, hydrogen fuel cell vehicles are anticipated to perform better due to their ability to quickly refuel and travel longer ranges without refueling. Manufacturers who want to target multi shift operations have the option of pursuing hydrogen fuel cell vehicles.

Economic Analysis – Ignored Insurance Cost

Comment: Commenter states that insurance costs are not included in the TCO. Commenter states that because ZEVs are more expensive, insurance costs are greater. [B2-40]

Agency Response: No changes were made to the regulation in response to this comment. While protecting a company's vehicles can be a component of insurance, most of the value of an insurance policy is to cover liability in the event of causing property damage or personal injury to another party. ZEVs are equally likely to be liable in the event of an insurance claim as a combustion-powered truck and therefore there is no difference in the cost in the largest portion of an insurance policy. Staff is not aware of any studies or reports which show higher insurance costs for electric trucks. Adding insurance costs to the TCO analysis would not significantly change the outcome of needing to significantly increase the number of ZEVs deployed by this regulation in order to meet state goals and the Board's direction.

Economic Analysis – Underestimated Infrastructure Network Service Costs

Comment: Commenter states there is missing analysis from the TCO such as charger network service costs. Commenter states that the TCO includes a \$500 per charger cost for maintenance, however the actual cost for Class 8 vehicles is between \$2,500 and \$10,000 per charger a year. [B2-40]

Agency Response: No changes were made in response to this comment. See staff discussion on infrastructure costs and assumptions in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Real-World Infrastructure Costs Differ from CARB Projections”.

Economic Analysis – Underestimated Tractor Battery Capacity Needs

Comment: Commenter states that the analysis underestimates the battery capacity required for ZEVs and states data from the 2018 California VIUS survey and several other studies of drayage trucks and goods movement trucks in Southern California suggests that a Class 8 tractor’s maximum daily mileage is approximately 1.65 times higher than the average daily mileage. Commenter makes a comparison on how an individual would not purchase a ZEV with a range of 70 miles when their average commute is 50 miles. Commenter states that staff should be using a higher average VMT when sizing the battery (but not when calculating activity) because trucks are specified by buyer to meet the higher daily activity of a new truck. Commenter states that because battery capacity has such a significant impact on the TCO model that ignoring mileage factors dramatically overestimates the utilization of the battery and underestimates the TCO of the EV. Commenter states that staff is underestimating the TCO of a Class 8 electric truck by 30-40%. [B2-40]

Agency Response: No changes were made to the regulation in response to this comment.

Staff’s assumptions regarding battery size for tractors is appropriate for fleet usage. In the Staff Report, staff assumed ZE tractors would be sold to drayage and other shorter-range applications. Based on statements from manufacturers and demonstrations currently underway, these shorter-range applications are well suited for ZEV deployments in the tractor segment due to their predictable routes, access to infrastructure, and ability to remain parked overnight. Staff acknowledges that a portion of drayage trucks operate using multi shifts, but because there is no mandate that fleets purchase ZEVs, manufacturers have the option to comply by selling ZEVs to other applications which do not use multi shift operations such as local food and beverage delivery. Staff will evaluate multi shift operations in drayage during the development of future requirements for zero-emission drayage.

Staff disagrees with the commenter’s claim that the battery sizes are inappropriate and unrepresentative of how businesses operate. When evaluating the cost of a ZEV, fleets

face a tradeoff between the range of the vehicle and the upfront capital cost. Fleets are unlikely to purchase a vehicle with limited range that will not be able to meet their needs, nor will they purchase a vehicle with excessive range that results in excess cost. Because fleets face no requirement to purchase ZEVs, manufacturers must ensure that they are selling vehicles with sufficient range at a price point that is attractive to fleets. Fleets have flexibility in how they choose to incorporate ZEVs into their fleet as they can elect to dispatch their ZEVs on shorter range, more predictable routes and leave the longer-range routes to the remaining combustion-powered vehicles in their fleet. Because of factors like this, decision making for fleets is fundamentally different to that of individuals and comparing the two is not appropriate in this scenario.

Large Entity Reporting – Burdensome to Business

Comment: Commenter states that the compliance and reporting requirements of ACT are too burdensome, even though they generally support improving air quality. Commenter also states the reporting requirement duplicates processes and information that is already available, which adds unnecessary bureaucracy that businesses must navigate. Commenter states CARB has not taken time to consider that abruptly lowering the reporting requirement from 100 to 50 vehicles will be adding back a considerable number of businesses that will now be forced to report. Commenter states that this maneuver blindsides businesses without sufficient time to assess the impacts of the regulation. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. The lowering of the reporting requirement from 100 to 50 vehicles was proposed during the 30 day comment period in compliance with APA requirements. Staff recognizes the potential unintended burden that the regulation may impose on businesses. Consistent with Board direction to streamline the reporting requirements, staff made several key changes to the original proposal: First, the changes would limit regulated entities to only those that own or direct the operation of medium- or heavy-duty vehicles. Second, the changes would also reduce the burden of reporting by completely removing the facility-based data and truck trip counting. Please see the discussion about staff's recognition of the potential unintended burden that the regulation may impose on businesses in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Regulation Requires Hard-to-Collect Information". In addition, please see response detailing the proposed streamlining of the large entity reporting requirement in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Cost Burden". Lastly, see discussion on the extensive outreach staff has conducted during the rulemaking process to inform fleets in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Large Entity Reporting – Insufficient Outreach"

Future ZEV Policy – Target Large Entities

Comment: Commenter states large entities that can afford ZEVs should be held accountable to meet fleet compliance requirements. [B2-31]

Agency Response: See response detailing the Board direction for staff to bring a fleet based recommendation to the Board in 2021, work so far on launching the next rulemaking effort for fleets, and why it is premature to discuss future ZE fleet rules at this time in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Adopt Zero-Emission Fleet Rule in 2021”.

Future ZEV Policy – Phased Fleet ZEV Rollout

Comment: Commenter states that the ACT regulation should start phasing in requirements beginning with local last mile operations, then regional operations, and lastly address long hauls. Commenter states the infrastructure costs are more gradual when using these phases. [B2-23-Form-2714]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about the infrastructure costs to implement ZEVs in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Infrastructure Concerns”. Also, see the discussion about the rationale for the compliance strategy detailed in the approved ACT regulation in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Considerations to Include in Future ZE Fleet Rule”.

Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions

Comment: Commenter states that we need to look into trucking contractors. Trucking companies, brokers, and other contracting entities often misclassify drivers as ‘independent contractors’ when they are, by law, employees. He states that 70-90% of drayage trucks are contractors that operate in firms of less than 100 trucks. [B2-06]

Agency Response: See response discussion on the importance of labor issues and their impact on air quality, and staff’s proposed changes to the large entity reporting requirement to ensure more potentially misclassified drayage workers are covered by the data reporting requirement for the entities that contract with them, in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions”.

Future ZEV Policy – Mandate ePTO Use in Non-Attainment Zones

Comment: Commenter recommends mandating the use of ePTO technology in certain zones with high NOx emissions. Commenter states that ePTO systems can be installed on existing trucks as a retro-fit to reduce emissions without the purchase of newer vehicles. [B2-25]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about why staff did not include ePTO technology in the manufacturer ZEV sales mandates in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales - Add Credit for Electrified Power Take Off”. Additionally, see discussion about why it is premature to discuss potential future ZE fleet mandates in this rulemaking in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Considerations to Include in Future ZE Fleet Rule”.

Future ZEV Policy – Commit to 100 Percent Zero-Emission Targets

Comment: Commenter states they support goals to have half of all trucks in California be zero-emissions by 2035, and all trucks be zero-emissions by 2045. [B2-77]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion on establishing 100 percent zero-emission targets in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Set Clear 100 Percent ZEV Targets”. Also, see the discussion about staff’s efforts to develop a future fleet rule in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Adopt Zero-Emission Fleet Rule in 2021”.

Out of Scope – Disadvantaged Community Policy

Comment: Commenter states that CARB should address the systemic marginalization of low-income communities of color that are more likely to be exposed to diesel pollution because their communities are usually located near freeways. [B2-37]

Agency Response: Staff made numerous modifications to the original proposal to increase the number of ZEVs deployed in California consistent with commenter and the Board’s direction. Increases in class 7 and 8 tractor group sales percentages ensure there are sufficient tractor sales to meet the goal of achieving an all zero-emission drayage fleet by 2035, which would directly benefit disadvantaged communities. For further details on the changes made to the original proposal that positively impact the environment and disadvantaged communities, please refer to chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements”. In July 2017, Governor Brown signed Assembly Bill (AB) 617 to reduce air pollution and the associated health impacts in highly impacted communities. To implement AB 617, CARB Board approved the Community Air Protection Blueprint on September 27, 2018, which includes strategies to reduce emissions and establishes Program requirements. For more information about CARB’s implementation of AB 617, see <https://ww2.arb.ca.gov/our-work/programs/resource-center/ab-617-implementation>.

Out of Scope – Incentive and Funding Policies

Comment: Commenter states it is important that the ACT regulation includes incentives to encourage the purchase of ZEVs. [B2-104, B2-23-Form-1503, B2-23-Form-3517, B2-23-Form-3583]

Comment: Commenter supports the ACT regulation and states that adequate funding be sought from the state legislators and the federal government to be put it in place, even if a tax increase or hike in the fees assessed under cap-and-trade is required. [B2-23-Form-2138]

Agency Response: No changes were made to the regulation in response to these comments. See the discussion about incentives in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Incentive and Funding Policies”.

Other - General Opposition

Comment: Commenter states that the efforts made to clean California's air has caused the quality of life to decrease for Californians. Commenter states the efforts of CARB are misleading and are trying to fix something that is not broken and causes economic harm to the poorest people in the state. Commenter states the ACT regulation will force the poor and middle-class truckers out of business leaving the state to only large trucking companies. [B2-23-Form-2943]

Agency Response: No changes were made to the regulation in response to this comment. See discussion in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Other – General Opposition”.

Other – Comments Addressed in the Environmental Analysis

Comment: Commenter would like to know where people would dispose of the lithium batteries and who is held accountable for the children mining the lithium. [B2-23-Form-2194]

Comment: Commenter states that CARB needs to solve the problems associated with electric vehicles, such as issues with child enslavement to mine minerals, the polluting from the battery manufacturing process, where/how to dispose of the batteries, and where does all the additional power to charge the batteries come from. [B2-23-Form-3900]

Comment: Commenter states that there is no regulatory assessment on the impacts on the power grid as a result of CARB's aggressive approach to adding ZEVs. [B2-58]

Agency Response: These comments are addressed in the “Final Environmental Analysis” document. See the Final Environmental Analysis prepared for the ACT

regulation ([Final EA link](#)) presented and approved by the Board at the June 25, 2020, hearing. Related to the assessment of impacts on the power grid, the Final Environmental Analysis found that short term impacts on energy demand were less than significant, and that long-term impacts on energy demand were net beneficial. Details can be found in the discussions for Impacts 6-1 and 6-2. Overall, ZEVs will be a small portion of overall electricity demand, and utilities are planning for this load as required by the CEC and CPUC.

Other – Support for Other Commenters

Comment: Commenter shares their support for EMA's recommendations to connect mandates to sales, and delay the implementation to improve the chances of successful fuel-engine replacements with ZEV. [B2-58]

Agency Response: No changes were made to the regulation in response to this comment. Please see staff's response to EMA's comment to delay the ZEV sales mandate until 2026 in chapter "Written Comments Received during the June 2020 Board Hearing", section "Manufacturer ZEV Sales – Delay Until 2026". Also, please see staff's response to EMA's comment to link the ZEV sales mandate with the ZEV purchase requirements in chapter "Written Comments Received during the June 2020 Board Hearing", section "Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements".

Other – Miscellaneous/Out of Scope Comments

Comment: Commenter states that agricultural vehicles, dust, and burning are also major factors of pollution. [B2-23-Form-3183]

Comment: Commenter states the ACT regulation should not only clean the air but also the water. Commenter states that water ways are polluted with plastic, chemicals, noise, and over fishing. Commenter states there should be high penalties for over fishing. [B2-23-Form-3695]

Comment: Commenter states we should look at London's hybrid double decker bus and how it decreased the air pollution, doing the same in California will change the air and soundscape. [B2-23-Form-2350]

Comment: Commenter states California needs to urge people to drive less. [B2-23-Form-2639]

Comment: Commenter states that social change must advocate for decreased use of foreign made products and increased investment in sustainable manufacturing within the USA. [B2-23-Form-2297]

Comment: Commenter states we need to promote more solar energy programs for California residents for cleaner electricity. [B2-23-Form-1725]

Comment: Commenter states CARB should require replacement of all yard equipment with electric. [B2-23-Form-3973]

Comment: Commenter states that it is time to make coal, oil, fracking, and nuclear power illegal. Commenter states that the ACT regulation should require cutting oil and coal mining in half annually to be zero by 2029, reducing petroleum use in half each year to be zero by 2030, shutting down nuclear power plants by 2022, zero fracking by 2022, and have aero synthetic chemical farming by 2023. [B2-23-Form-3685]

Comment: Commenter states there should be more transportation by rail and if people are still burning rice fields they should compost instead. [B2-23-Form-971]

Comment: Commenter states that trucks need to be powered by solar and wind. [B2-23-Form-3327]

Comment: Commenter states that trucks crossing the state should have to meet certain clean energy criteria. [B2-23-Form-4126]

Comment: Commenter states that pipeline gas will require permanent infrastructure and will keep the ports and goods movement industry locked into old tech instead of moving into modern, 21st Century solutions. Commenter states that we cannot let pipeline gas become the new normal in running our vehicles, trucks or other infrastructure. [B2-23-Form-1503]

Comment: Commenter states that all vehicles should be powered by solar, hydroelectric, tidal, wind, and or geothermal energy to recharge batteries. [B2-23-Form-1008]

Agency Response: These comments are outside the scope of this rulemaking, however, staff appreciates the comments.

VERBAL COMMENTS RECEIVED DURING THE JUNE 2020 BOARD HEARING

Manufacturer ZEV Sales – General Support

Comment: Commenter states general support for the proposed changes to the regulation. [T2-01, T2-02, T2-03, T2-04, T2-05, T2-06, T2-08, T2-10, T2-11, T2-13, T2-15, T2-16, T2-17, T2-18, T2-19, T2-20, T2-21, T2-22, T2-23, T2-24, T2-26, T2-27, T2-28, T2-29, T2-30, T2-31, T2-32, T2-33, T2-34, T2-35, T2-36, T2-37, T2-38, T2-40, T2-44, T2-45, T2-46, T2-47, T2-48, T2-50, T2-51, T2-53, T2-56, T2-57, T2-58, T2-59, T2-60, T2-61, T2-62, T2-63, T2-64, T2-65, T2-66, T2-67, T2-68, T2-71, T2-72, T2-73, T2-74, T2-76, T2-77, T2-83, T2-84, T2-85, T2-87, T2-88, T2-89, T2-90, T2-92, T2-93, T2-97, T2-98, T2-99, T2-100, T2-101, T2-102, T2-103, T2-104, T2-106, T2-107, T2-108, T2-110, T2-111, T2-112, T2-113, T2-115, T2-116, T2-118, T2-119, T2-120, T2-122, T2-123]

Comment: Commenter states that his constituents are electricians who look forward to the enactment of ACT because of the job opportunities that will be created to build the charging infrastructure needed for electric vehicles. [T2-42]

Comment: Commenter states support for ACT regulation because it will provide economic stimulus, further environmental justice efforts, help fight climate change, improve working conditions, and transform our markets. [T2-55]

Comment: Commenter states that last-minute changes to definitions that invite fossil fuels into this rule are unacceptable because it undermines the intent of the ACT regulation. [T2-72]

Agency Response: Staff appreciates the supportive comments. Any additional issues raised by each commenter, if any, are addressed in the applicable sections of this document based on the nature of the issue being raised.

Manufacturer ZEV Sales - Strengthen the ACT Proposal by Increasing Sales Percentage Requirements

Comment: Commenter states the sales requirements for heavy-duty Class 7 and Class 8 tractors should be stronger. [T2-22, T2-35, T2-53, T2-73, T2-81, T2-84, T2-114]

Comment: Commenter states that the ACT regulation is not ambitious enough. [T2-96]

Comment: Commenter states the ACT regulation should start in 2021. [T2-97]

Agency Response: No changes were made to the regulation in response to these comments. Staff recognizes several challenges that currently appear to be barriers to more aggressive requirements. Staff will evaluate how the zero-emission market develops and can propose modifications in the future to reflect what is feasible. Please see the discussion on staff's rationale for increasing the regulation's requirements and limitations to increasing them further or starting them earlier in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements".

Manufacturer ZEV Sales – Manufacturer Requirements Are Too Stringent

Comment: Commenter states that CARB should maintain the original sales purchase requirements for model years 2024 through 2030. [T2-23]

Agency Response: No changes were made to the regulation in response to this comment. Staff recognizes that the ACT regulation's requirements are aggressive but are technically and economically feasible. These requirements are necessary in order to enable large-scale electrification at the scale necessary to meet the states air quality and climate goals. Without transitioning as much of the medium- and heavy-duty sector

to zero-emission where feasible, California will not be able to meet its air quality goals, climate change targets, nor its carbon neutrality goals. Further detail on this topic may be found in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Manufacturer Requirements Are Too Stringent”.

Manufacturer ZEV Sales – Credit for Low NOx Engines or Alternative Fuels

Comment: Commenter is requesting an addition to the definition of near-zero-emission vehicle to include the certified low NOx 0.02-gram engine and allow these vehicles to earn credits. [T2-09, T2-14]

Comment: Commenter states the need to incentivize low NOx trucks to prevent fleet operators from defaulting to dirtier diesel models. Commenter states that the Omnibus Rule does nothing to deploy the most stringent low NOx trucks prior to 2027. [T2-09]

Comment: Commenter is requesting an addition to the definition of near-zero-emission vehicle to include the certified low NOx 0.02-gram engine to allow these vehicles to earn credits. Commenter requests corresponding changes to the NZEV credit provisions, such that near-term air quality benefits are incentivized in this rulemaking. [T2-25, T2-82, T2-91]

Comment: Commenter requests partial credits for low NOx trucks until the Omnibus rule requires manufacture of such trucks in 2027 and beyond. [T2-54]

Comment: Commenter states that we need to make sure that combustion trucks on the road continue to get cleaner without undermining zero-emission mandates by providing credits for fuels that do not advance zero-emission technology. [T2-67]

Comment: Commenter requests clarification on the interplay between the ACT regulation and the Omnibus rule so that OEMs and fleets can understand how the compliance requirements interact. [T2-70]

Comment: Commenter states that the proposed ACT regulation should consider including technologies such as low emission diesel, renewable diesel, biodiesel, natural gas hybrids, and natural gas vehicles as technologies that can meet the immediate need to reduce both air quality and greenhouse gas emissions at lower costs. Commenter states that separating out near-zero technologies from the ACT regulation undermines CARB's process to find a comprehensive solution to air quality problems by comparing different technologies and pick the best pathway. [T2-80]

Comment: Commenter states that because Class 7 and Class 8 vehicles are more difficult to electrify, 0.02 low NOx vehicles would be a more accessible solution to meet near-term emission goals. [T2-82]

Comment: Commenter states the ACT regulation does not support the manufacture and purchase of low NOx engines, risking near-term progress towards San Joaquin and South Coast deadlines. Commenter states that the Board is, in effect, encouraging the purchase of today's diesel technology over RNG and low NOx technology. [T2-121]

Agency Response: No changes were made to the regulation in response to these comments. The ACT regulation is focused on accelerating the use of zero-emission vehicles where emissions associated with new combustion-powered vehicles and engines are being addressed in the recently approved Low NOx Omnibus rulemaking and existing cleaner fuels policies. Further details are found in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Credit for Low NOx Engines and Renewable Fuels".

From a process perspective, CARB provides the following general explanation about its procedural approach to conducting review of emission impacts in the context of adopting regulations.

CARB's emission analyses are based on the expected compliance responses of the regulated entities covered a proposed regulation. In other words, the potential indirect physical changes to the environment will be the result of reasonably foreseeable actions undertaken by other entities (both private and public) in response to a CARB regulation. For example, individual vehicle manufacturers or major refiners for hydrogen and renewable fuels could choose other compliance responses that result in different project impacts. It is not possible, however, to know with a reasonable level of certainty the specific actions that would be selected by regulated communities to comply with a CARB regulation. Such regulated entities, in addition to local communities, would be required to undergo project-level environmental review once they decide specific actions they need to take, which could conclude there are more adverse or less substantial environmental effects as those contained a CARB environmental review document.

Ultimately, CARB takes a conservative approach and considers some environmental impacts as potentially significant because of the inherent uncertainties in the relationship between the potential compliance responses that are reasonably foreseeable under the ACT Regulation and environmentally sensitive resources or conditions that may be affected by those responses. In other words, the speculative nature of trying to predict how the regulated community will respond with the level of specificity that would inform a detailed impact analysis is inherently uncertain given the high variability of potential physical development projects that could result in response to the ACT regulation. Therefore, in an effort to acknowledge the inherent uncertainty and speculative nature of attempting to forecast compliance responses and potential resultant physical projects (e.g., uncertainty about the location and extent of construction for new manufacturing and associated facilities, the ability to repurpose existing infrastructure, the number of manufacturers that will decide not to sell vehicles

in California, and how fleets will respond by purchasing ZEVs or installing onsite energy storage) while still seeking to make good-faith, full-disclosure to the public, CARB tends to overstate environmental impacts.

Where a potentially significant environmental effect could not be feasibly mitigated with certainty, CARB identifies the impact as significant and unavoidable. These are significant and unavoidable impacts because all of the physical projects associated with compliance responses will be permitted by local land use agencies whose jurisdiction govern the use of the project site; CARB has no land use permit authority over development projects. These land use agencies are likely to employ a range of different approaches to mitigating impacts related to new infrastructure and manufacturing facilities that may be built as part of the compliance response to regulations, such as the ACT Regulation. Moreover, even if CARB had land use authority over future development projects, CARB does not have enough information about potential impacts to impose mitigation measures that meet the two constitutional requirements for the imposition of mitigation measures: (1) the need for the mitigation measures to show a connection that they mitigate actual, specific impacts from a project; and (2) the need for the mitigation measures to be “roughly proportional” to the impacts of the project. (Nollan v. California Coastal Commission (1987) 483 U.S. 825, 837; *Erllich v. City of Culver* (1996) 12 Cal.4th 854, 879-880; Title 14 CCR section 15126.4, subd. (a)(4).) As a result, CARB determined that the potential impacts from the reasonably foreseeable compliance responses and associated speculative projects could be significant and unavoidable in certain resource areas.

Manufacturer ZEV Sales – Near-Zero-Emission Vehicle Definition

Comment: Commenter requests the inclusion of the low NOx 0.02 gram engines as part of the near-zero definition because the proposed near-zero definition in the ACT is in conflict with the widely used near-zero definition. [T2-43, T2-54, T2-91]

Comment: Commenter states that they would like to change the definition of "near-zero" to include vehicles with Low NOx engines in order to meet near-term emissions goals before the first ACT compliance deadline. [T2-52, T2-85, T2-94]

Comment: Commenter states that the "Near-Zero" definition should include the 0.02 gram low NOx standard when coupled with renewable natural gas. [T2-70, T2-79, T2-110]

Agency Response: No changes were made to the regulation in response to these comments. See response summarizing how the term “near-zero-emission vehicle” is not appropriate to apply to vehicles meeting the recently approved Low NOx engine standard in chapter “Written Comments Submitted During Original Proposal’s 45-Day

Comment Period”, section “Manufacturer ZEV Sales – Near-Zero-Emissions Vehicle Definition”.

Manufacturer ZEV Sales – Near-Zero-Emission Vehicle Definition - ePTO

Comment: Commenter states that the definition of near-zero should include work trucks that are primarily used to power the work functions. Commenter states a definition of all-electric mile range that provides partial emission credits doesn't allow solutions that would electrify the auxiliary functions and reduce stationary emissions. [T2-96]

Comment: Commenter requests that ePTO systems are included in the definition of near-zero-emission vehicles. [T2-109]

Agency Response: No changes were made to the regulation in response to these comments. Please see further details about why staff did not include ePTO technology in the manufacturer ZEV sales mandates in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales - Add Credit for Electrified Power Take Off”. In addition, please see further details about the “near-zero” definition in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Low NOx Needed for Long-Haul”.

Manufacturer ZEV Sales – Adjustments to NZEV Credits

Comment: Commenter proposes that eligibility for the 75-mile all-electric range to continue to at least 2045. [T2-30]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion about why extending the sunset date for plug-in hybrids could mean less preferred ZEV technology on the road in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Adjustments to NZEV Credits”.

Manufacturer ZEV Sales – Credit for Conventional Hybrids

Comment: Commenter encourages CARB to expand the compliance pathway to include partial credits for conventional heavy-duty hybrids. [T2-23]

Comment: Commenter states that partial credit for hybrid electric vehicles that meet the phase two GHG standards early would provide a path for faster CO₂ reduction. [T2-75]

Agency Response: No changes were made to the regulation in response to these comments. See staff discussion on why conventional hybrids do not need credit in the ACT regulation due to its already commercialized status in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Credit for Conventional Hybrids”.

Manufacturer ZEV Sales – Extra Credit for ZEVs Based on Range

Comment: Commenter states CARB should assess how truck manufacturers and fleet operators could be incentivized to push for longer range vehicles through the credit system for trucks, because this aligns with the needs of the truck fleet operators and the longer-range vehicles with maximum payload capacity. [T2-41]

Agency Response: See response summarizing why staff is not proposing modifications to add credit for ZEVs based on range in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Extra Credit for ZEVs Based on Range”.

Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks

Comment: Commenter requests consideration of a separate compliance pathway for the waste industry to address the industry's unique issues. Commenter states that the waste industry is often grouped with buses because of duty cycle characteristics but that these sectors are different because bus ridership is subsidized whereas the waste industry is funded by unsubsidized rates. [T2-39]

Agency Response: No changes were made to the regulation in response to this comment. The ACT regulation does not require any manufacturer to produce ZE refuse trucks nor does it require any refuse truck fleet to purchase ZEVs. Manufacturers must electrify a portion of their sales based on their own assessment of what they believe is best suited for electrification. Fleets have no requirement to purchase ZEVs as it is the responsibility of manufacturers to build ZEVs that meet fleets needs at an attractive price point. Based on this regulatory structure, it does not make sense to create a separate compliance pathway for the refuse industry given that they face no requirement to purchase ZEVs.

As part of the regulatory process, staff analyzed the feasibility of 87 different market segments as described in Appendix F to the staff report. This analysis included several different types of refuse trucks. Staff did not assess the feasibility of transit buses as they are outside the scope of the regulation, and staff did not base any feasibility assessments on the performance of zero-emission transit buses. For further discussion on the feasibility of zero-emission refuse trucks in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Feasibility of Zero-Emission Refuse Trucks”.

Manufacturer ZEV Sales – ACT Labor Requirements

Comment: Commenter urges CARB to include strong labor requirements in the ACT regulation and related rules. [T2-86]

Agency Response: No changes were made to the regulation in response to this comment. See response discussion on the importance of labor issues and their impact

on air quality, and staff's proposed changes to the large entity reporting requirement to ensure more potentially misclassified drayage workers are covered by the data reporting requirement for the entities that contract with them, in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions".

Manufacturer ZEV Sales – Focus on Beachhead Markets

Comment: Commenter states that if a focused beachhead approach is used, the proposed higher percentage targets in the ACT regulation can be achieved. [T2-05]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion about transitioning key beachhead markets to zero-emission in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements".

Manufacturer ZEV Sales – Include Hydrogen Stored on Vehicle in AER Calculation

Comment: Commenter states that the definition of "all-electric range" should include energy stored on board the vehicle in the form of hydrogen that converts to electricity. [T2-49]

Agency Response: No changes were made to the regulation in response to this comment. The rationale for this definition is to set forth the meaning and test procedures by which NZEVs must be tested to determine the all-electric range needed to receive NZEV credit for this regulation. NZEVs are not currently expected to use hydrogen fuel cells due to the lack of any commercial product or announcement that manufacturers are developing this technology. Fuel cell vehicles earn full ZEV in the ACT regulation and therefore do not need their all-electric range considered.

Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements

Comment: Commenter recommends an alternative approach that links the ZEV sales mandate with ZEV purchase requirements. [T2-12]

Comment: Commenter strongly recommends that the resolution language for the ACT regulation include a direct tie to the Fleet Rule. Commenter recommends that the language explicitly state that the ACT regulation will go into effect no less than two years after the Fleet Rule is adopted. [T2-34]

Agency Response: No changes were made to the regulation in response to these comments. Per Resolution 20-19, the Board directed staff to develop a zero-emission fleet rule that is consistent with the manufacturer rule for Board consideration in 2021. Generally, staff believes that the manufacturer sales mandate coupled with a future ZEV fleet rule is the best approach to give manufacturers lead time to produce vehicles, time

for staff to receive and analyze the reporting and usage data, and craft an effective and equitable fleet rule. Infrastructure developments will happen concurrently through other state efforts. See staff response detailing the next rulemaking effort for fleets in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements”.

Manufacturer ZEV Sales - Add Midterm Reviews, Offramps, Market Reviews, or Appeals Process to Assess Regulation

Comment: Commenter recommends that the resolution language include a date next year for when CARB staff can present an update on the development of the fleet rule, the progress of the ACT regulation, and any amendments necessary. [T2-34]

Agency Response: No changes were made to the regulation in response to this comment. Staff intend to return to the Board with a recommendation in 2021 related to complementary strategies to further the deployment of ZEVs, and the approved ACT regulation can be adjusted at that time if staff and the Board deem it necessary. Staff does not believe mid-term reviews or checkpoints are necessary, as the pathway to meet the various ZEV goals described in the Board’s final resolution will require, at minimum, full compliance with the approved regulation. For additional information, see response summarizing how off-ramps fail to add regulatory certainty in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Add Midterm Reviews, Offramps, Market Reviews, or Appeals Process to Assess Regulation”.

Manufacturer ZEV Sales – Add Travel and Pooling Provisions for Section 177 States

Comment: Commenter recommends that CARB include an optional compliance pathway for Section 177 states by adding a mechanism such as a credit pooling provision for the ACT regulation that will allow OEMs to pull credits within the east and west regions. [T2-34]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion about why travel and pooling provisions were not included for Section 177 states in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Add Travel and Pooling Provisions for Section 177 States”.

Manufacturer ZEV Sales – Add Off-Ramps to the Proposal Due to COVID-19

Comment: Commenter believes that due to the pandemic a provision should be incorporated into the regulation to ensure truck manufacturers aren’t deemed non-compliant for not reaching vehicle sales totals beyond those which can be achieved with

limited, disconnected public funding for vehicles and infrastructure, as well as the long lead times for the charging infrastructure installation. [T2-07]

Agency Response: No changes were made to the regulation in response to this comment. See response detailing considerations for the impacts for COVID-19 in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”. Additionally, see response summarizing how off-ramps fail to add regulatory certainty in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Add Off-Ramps to the Proposal”.

Manufacturer ZEV Sales – No Pay-to-Pollute Penalties

Comment: Commenter requests that CARB, in the final statement of reasons, reiterate that ZEV penalties are not intended to serve as a pay-to-play mechanism and further clarify that penalties applied to deficits that have not been made up in the time allotted, do not obviate the need for manufacturers to fill ZEV credit deficits. [T2-57]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about how manufacturers must still make up deficits even if assessed a penalty for non-compliance in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – No Pay-to-Pollute Penalties”.

Manufacturer ZEV Sales – Infrastructure Concerns

Comment: Commenter supports creating public or private partnerships to address infrastructure challenges. [T2-34]

Comment: Commenter states that there needs to be more focus on fueling infrastructure for the zero-emission trucks because it incentivizes investment in renewable fuel production capacity, both for hydrogen and electricity. [T2-41]

Comment: Commenter states that the ACT regulation needs to address the infrastructure needed to extend the reach of these ZEV technologies with energy that is renewably sourced. [T2-107]

Comment: Commenter urges CARB to collaborate with utilities, local air districts, and manufacturers to implement infrastructure, specifically in Inland Empire communities. [T2-119]

Agency Response: No changes were made to the regulation in response to these comments. See the discussion about infrastructure incentive programs from utilities and the State’s long-term development strategies, as well as how the large entity reporting requirement will support infrastructure development in chapter “Written

Comments Submitted During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Infrastructure Concerns”.

Manufacturer ZEV Sales – Delay Until 2026

Comment: Commenter presents an alternative approach that proposes the sales mandate begin in 2026 to allow time for staff to develop and implement the fleet rule, develop the necessary charging infrastructure, recovery from current budget crisis, allocate funds for incentives, and time for manufacturers to recover from the impacts of the COVID crisis. [T2-12]

Agency Response: No changes were made to the regulation in response to this comment. Delaying the start of the rule is inconsistent with Board direction to increase the number of ZEVs deployed. See discussion on staff’s rationale to increase the regulation’s requirements in chapter “Written Comments Submitted During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and /or Increasing Sales Percentage Requirements”. In addition, see response detailing why impacts from the COVID-19 pandemic will not affect this regulation in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”.

Manufacturer ZEV Sales – 15- and 30-Day Changes Timeframe Insufficient

Comment: Commenter would like an explanation for the use of 15-Day and 30-Day changes of major regulations (i.e., ACT and At Berth) because staff made significant changes after the initial hearing at the direction of the Board. Commenter states the analyses for these changes has not been as rigorous as it was for the initial proposals and expresses concern that the process may discourage legitimate and valuable course corrections. [T2-70]

Agency Response: No changes were made to the regulation in response to this comment. The regulatory process includes mandatory comment periods for any rulemaking. After the Staff Report was posted and the 45-day comment period and public hearing concluded, direction from the Board and many comments from the public lead to modifications to strengthen the ACT regulation. Any time there are substantial changes made to a proposed regulation, another comment period has to occur. Staff doubled the amount of time required, a total of 30 days, for the public to comment on the modified regulations and the supporting analyses of the now approved ACT regulation to address concerns related to the COVID-19 pandemic. Staff had already performed rigorous analyses in the Staff Report to address technological feasibility, cost, emissions, and health benefits. That initial analysis was expanded and updated with the new information gathered after the Staff Report was released to reflect the ongoing market changes supporting increases to the ZEV sales requirements. The modifications after the First Board hearing can be found in Attachment C to the 30-Day Changes. The additional information added in Attachment C indicated that

electrification is more suitable than the original model in the Staff Report, and the new requirements were supported by these new findings.

Manufacturer ZEV Sales – ZEV Reliability

Comment: Commenter asks, what is CARB's expectations for ZEV reliability and how does CARB propose to meet reliability targets to ensure customers/companies have a product that remains in operation and stays within monetary limits? [T2-105]

Agency Response: No changes were made to the regulation in response to this comment. CARB adopted the optional Zero-Emission Powertrain Certification regulation on June 27, 2019. The approved ACT regulation requires that ZEVs sold into California must meet the requirements of the Zero-Emission Powertrain Certification regulation starting with the 2024 model year. This requirement establishes minimum criteria for the quality and reliability of ZEVs, provides emissions warranty to the vehicle purchaser, ensures information regarding ZEVs and their powertrains are effectively and consistently communicated to purchasers, and accelerates progress towards greater vehicle reparability. CARB anticipates that ZEV technology will continue to rapidly improve thereby increasing reliability, and as the market matures, costs will continue to decrease.

Manufacturer ZEV Sales – BEVs vs FCEVs

Comment: Commenter states that hydrogen fuel cell vehicles are verified to be zero-emissions technology, however it is difficult to verify the content of emissions from battery charging. [T2-78]

Comment: Commenter states that hydrogen fuel cells are produced by fossil fuels and are half as efficient as batteries, while the Community Choice electricity the commenter uses to plug-in is 88% carbon free. [T2-90]

Agency Response: No changes were made to the regulation in response to these comments. Staff disagrees with commenter that hydrogen fuel cells are produced entirely by fossil fuels. Hydrogen is produced from several different sources which include electrolysis from water, steam reformation from renewable sources, biomethane capture from the breakdown of organic waste from landfills, wastewater, animal waste, crop residuals, and food waste, and fossil fuel natural gas. In addition, the LCFS program incentivizes the production and use of renewable hydrogen by providing higher credit values per kilogram of hydrogen when compared to fossil fuel hydrogen. Finally, SB1505 emphasizes the use of renewable hydrogen to diversify sources of transportation energy.

Additionally, staff disagrees with commenter that it is difficult to verify the emissions associated with battery charging. CARB is able to determine the carbon intensity of emissions from battery charging (the emissions resulting from the generation and

distribution of electricity). Through the LCFS program, there are three Lookup Table pathways available to identify the carbon intensity of electricity used as a fuel for transportation. These pathways include the California Average Grid Electricity, zero-carbon intensity electricity, and smart charging/smart electrolysis. For more information on the LCFS electricity pathways, please visit

<https://ww2.arb.ca.gov/resources/documents/lcfs-electricity-and-hydrogen-provisions>.

Manufacturer ZEV Sales – Remove Zero-Emission Powertrain (ZEP) Certification Requirements

Comment: Commenter states that the zero-emission powertrain rule puts additional compliance costs on every manufacturer which would make it more difficult for start-ups to enter the market without some form of waiver to reduce the costs. [T2-96]

Agency Response: No changes were made to the regulation in response to this comment. The ZEP certification procedures are critical for ensuring manufacturers are developing quality products for consumers through its provisions. Please see the discussion about ZEP certification in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Remove Zero-Emission Powertrain (ZEP) Certification Requirements”. In addition, CARB offers a portfolio of incentive programs which are designed to incentivize technology from early demonstrations to full scale commercial deployment. The demonstrations and pilot projects funded through our incentive programs help reduce costs, increase experience with the new technologies, and expand the overall ZEV marketplace.

Economic Analysis – General Cost Concerns

Comment: Commenter states they are concerned about the financial burden to independent and misclassified drivers resulting from the purchase of new equipment. [T2-87]

Agency Response: No changes were made to the regulation in response to this comment. See staff discussion on how ZEVs will save money over time versus diesel vehicle and how there is not a purchasing requirement for fleets in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – General Cost Concerns”. Also, see staff discussion on changes made that will help gather more information to address misclassification issues in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions”.

Economic Analysis – Include More Fuel Cell Vehicles

Comment: Commenter states that there needs to be more of a balance between battery electric and fuel cell electric technologies in the proposed regulation. Commenter states

the hydrogen fuel cell electric truck option appears to be considered as a marginal contributor in the impact calculations. [T2-41]

Agency Response: No changes were made to the regulation in response to this comment. Battery-electric and fuel cell electric technologies are treated equally as credit generators in the approved ACT regulation. Staff's analyses only included hydrogen fuel cell vehicles as a small percentage due to lack of currently commercial vehicles and larger near-term barriers to adoption of these vehicles.

Economic Analysis – Underestimated Tractor Battery Capacity Needs

Comment: Commenter states, citing a Gladstein, Neandross and Associates analysis, that battery capacity for [tractor] range is underestimated by 50%, which negates CARB's idealized assumptions regarding fleet operations. [T2-54]

Agency Response: No changes were made to the regulation in response to this comment. See discussion about staff's assumptions for fleets used to determine the battery sizing used in the analysis in chapter "Written Comments Received during the June 2020 Board Hearing", section "Economic Analysis – Underestimated Tractor Battery Capacity Needs".

Economic Analysis – Ignored Insurance Cost

Comment: Commenter states that the TCO analysis did not include insurance costs. [T2-54]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on insurance costs in chapter "Written Comments Received during the June 2020 Board Hearing", section "Economic Analysis – Ignored Insurance Cost".

Economic Analysis – Cost Analysis Underestimates Total Cost of Ownership

Comment: Commenter states that the total cost of ownership for ZEVs is underestimated by 80% to 90%. [T2-54]

Agency Response: No changes were made to the regulation in response to this comment. Please see the discussion regarding CARB's methodology to evaluate costs to the state as a whole and the total cost of ownership for a vehicle in chapter "Written Comments Received during the 30-Day Comment Period", section "Economic Analysis – General Cost Concerns". In addition, see the discussion about vehicle cost in chapter "Written Comments Received during the 30-Day Comment Period", section "Economic Analysis – Cost Analysis Underestimates Vehicle Cost".

Economic Analysis – Underestimated Infrastructure Network Service Costs

Comment: Commenter states that the TCO analysis did not include the cost of the charger network service and insurance costs. [T2-54]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on insurance costs in chapter “Written Comments Received during the June 2020 Board Hearing”, section “Economic Analysis – Underestimated Infrastructure Network Service Costs”. See also discussion on insurance costs in chapter “Written Comments Received during the June 2020 Board Hearing”, section “Economic Analysis – Ignored Insurance Cost”.

Economic Analysis – Fleet Infrastructure Resilience

Comment: Commenter states that fleet infrastructure redundancy and resiliency were not considered in the TCO analysis. [T2-54]

Agency Response: No changes were made to the regulation in response to this comment. See discussion on the work California is undertaking to bolster resilience and the role of ZEVs in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Fleet Infrastructure Resilience”.

Economic Analysis – Impact of COVID-19

Comment: Commenter doubts the market’s readiness to absorb the volumes proposed in this regulation due to lack of infrastructure and economic impacts of the pandemic, including reduced carbon auction revenue that will impact HVIP funding to support early ZEV sales. [T2-07]

Comment: Commenter states that due to the pandemic, the degree of difficulty to implement the ACT regulation has increased. [T2-95]

Agency Response: No changes were made to the regulation in response to these comments. For discussion on staff’s recognition of COVID-19’s impact on the trucking industry and why staff feels the regulation’s requirements are feasible see chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”.

Emissions Methodology – Include Upstream Emissions

Comment: Commenter states that CARB needs look beyond the GHG emissions from the tailpipe and consider the source of electricity generation. [T2-90]

Agency Response: No changes were made to the regulation in response to this comment. See discussion detailing how staff already assessed well-to-wheel GHG emissions and why it is not appropriate to include NOx or PM upstream emissions in the

emissions analysis for this regulation in chapter “Written Comments Received during the 30-Day Comment Period”, section “Emissions Methodology – Include Upstream Criteria Pollutants”.

Large Entity Reporting – Clarify Light-Duty Fleets With One Truck Are In Scope

Comment: Commenter states additional clarification is needed on whether light-duty fleet companies that own one large truck are required to report. [T2-85]

Agency Response: No changes were made to the regulation in response to this comment. The reporting requirement applies to entities that had annual revenues greater than \$50 million in 2019 and had one or more vehicles over 8,500 lbs. GVWR under common ownership or control in California. For entities below the annual revenue threshold, the reporting requirement applies to fleet owners with 50 or more vehicles with a GVWR greater than 8,500 lbs. under common ownership or control and brokers/entities that dispatch 50 or more vehicles with a GVWR greater than 8,500 lbs. Light-duty vehicles have no reporting requirements and vehicle home bases with only light-duty vehicles do not need to be reported.

Large Entity Reporting – Timing of Data Collection

Comment: Commenter requests that CARB consider the differences between construction fleets and delivery fleets for fleet reporting and the impacts of COVID-19 on the quality of data required in April. [T2-69]

Agency Response: No changes were made to the regulation in response to this comment. While the pandemic is having significant impacts on the economy as a whole, many sectors in the trucking industry appear to be relatively unaffected by the economic slowdown. Because of this, the data submitted will still be of high quality, useful, and critical as staff continues developing future zero-emission fleet rules. Staff have already included additional flexibility in selecting representative time periods for data collection, described in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Timing of Data Collection”.

With regards to the differences between fleet types, staff is in the process of developing the specifics of a future fleet rule to identify which segments and associated fleet sizes are most suitable for electrification. The fleet segment information collected from the reporting requirement will be considered and critical to the development of the fleet rule.

Large Entity Reporting – Reporting Guidance Needed

Comment: Commenter states that there needs to be proper education on reporting to get all of the data needed to make the ACT regulation successful. [T2-92]

Agency Response: No changes were made to the regulation in response to this comment. Staff is in the process of developing a standardized reporting

template/system. Staff will also conduct stakeholder outreach and hold a public workshop in the near future to allow entities the opportunity to provide feedback on the system.

Large Entity Reporting – Insufficient Outreach

Comment: Commenter states that they would like more collaboration with CARB on regulations that impact their industry. [T2-52]

Agency Response: See response detailing outreach actions staff undertook during the public process of this regulation, including workshops, workgroup meetings, and a mass mailout in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Insufficient Outreach”.

Large Entity Reporting – Strengthen the Reporting Requirement

Comment: Commenter states the reporting requirement should be strengthened. [T2-89]

Comment: Commenter states that the 50-vehicle threshold is not low enough, as it would not gather information about the majority of small fleets, which is critical. [T2-117]

Agency Response: No changes were made to the regulation in response to these comments. Staff previously lowered the threshold for respondent fleets from 100 to 50 vehicles. Based on available information, staff believes that lowering this number further would result in exponentially more fleet respondents with diminishing returns on the value added by the additional data. Lowering the threshold further would be contrary to the Board’s direction to streamline the reporting requirement. Please see the discussion about lowering the reporting requirement for fleets in chapter “Written Comments Received during the 30-Day Comment Period”, section “Large Entity Reporting – Smaller Fleet Considerations”. The information required captures the information necessary to support the development of the fleet rule; adding more questions could significantly increase the amount of data collection required for fleets. Staff believes an appropriate balance was struck.

Large Entity Reporting – Unclear Language Will Require Technical Support

Comment: Commenter states that the rule requires significant interpretation by the regulated community and doesn’t address enforcement penalties. Commenter states that if CARB adopts the ACT regulation without language fixes, resources should be dedicated for technical support to comply with the regulation. [T2-85]

Agency Response: No changes were made to the regulation in response to this comment. See response detailing proposed clarifications and streamlining of the large entity reporting requirement in chapter “Comments Received During Original Proposal’s

45-Day Comment Period”, section “Large Entity Reporting – Unclear Language, Unclear Requirements, Unnecessary Information”.

With regards to enforcement penalties, staff added section 1963.5(a)(4) in the approved regulation to provide stakeholders clarity in the event of manufacturer noncompliance and to ensure a consistent methodology in determining how the penalty should be assessed. Staff’s intent is to collect useful data with the reporting requirement and will work with regulated entities if questions arise. Please see the discussion about remediation pathways without enforcement action in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Large Entity Reporting – Enforcement Concerns”. In addition, staff is in the process of developing Large Entity Reporting guidance and a standardized reporting template/system. Staff will also conduct a virtual public workshop in the near future to allow entities the opportunity to provide feedback on the reporting template/system.

Future ZEV Policy – Include Labor Standards as Part of Incentives Used for Future Fleet Rules

Comment: Commenter recommends that CARB include labor standards with any funds distributed as part of the Fleet rule. [T2-29]

Agency Response: No changes were made to the regulation in response to this comment. This comment is outside of the scope of the ACT rulemaking. Please see the discussion on the importance of labor issues and their impact on air quality, and staff’s proposed changes to the large entity reporting requirement to ensure that more potentially misclassified drayage workers are covered by the data reporting requirement for the entities that contract with them, in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions”.

Future ZEV Policy – Adopt Zero-Emission Fleet Rule

Comment: Commenter states the need for a strong fleet rule to attain climate goals and to protect public health. [T2-10]

Comment: Commenter encourages CARB take complementary actions such as accelerating the adoption of the pending fleet rule, and passing a resolution to establish a target date for when the State can achieve hundred percent zero-emission truck fleets. [T2-66]

Comment: Commenter states they support a strong Fleet rule with strong reporting requirements. [T2-87]

Agency Response: No changes were made to the regulation in response to these comments. The Board directed staff to bring a fleet rule for Board consideration by the

end of 2021, which is earlier than initially proposed, when they approved the Resolution. For further detail on the topic, refer to chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Adopt Zero-Emission Fleet Rule in 2021”. Please see the discussion on establishing 100 percent zero-emission targets in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Set Clear 100 Percent ZEV Targets”.

Future ZEV Policy – Remove “Everywhere Feasible” from 100 Percent ZEV Targets

Comment: Commenter states that the "everywhere feasible" caveat to the proposed goal of 100% ZE by 2045 should be removed because the caveat leaves room for interpretation and confusion. [T2-72]

Agency Response: No changes were made to the regulation in response to this comment. The Board directed staff to work towards an ultimate goal of 100 percent zero-emission, where feasible, by 2045 when they approved the Resolution. It is not currently feasible to require 100% ZEVs in all use cases. As technology improves, staff and the Board can revisit the goals if needed. See discussion detailing ZEV transition goals in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Set Clear 100 Percent ZEV Targets”.

Future ZEV Policy – Strengthen Timelines and Targets in Future ZEV Rules

Comment: Commenter states that the ACT regulation does not go far enough to protect public health and CARB must institutionalize, strengthen, and speed up the timelines and targets in subsequent rules for electrification and ZEVs adoption. [T2-86]

Comment: Commenter states that they support the transition to ZEVs for all public transportation. [T2-97]

Agency Response: No changes were made to the regulation in response to these comments. See discussion detailing ZEV transition goals in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Future ZEV Policy – Set Clear 100 Percent ZEV Targets”.

Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions

Comment: Commenter states the need to address the issue of driver misclassification of independent contractors in the fleet rule. [T2-10, T2-72, T2-101, T2-102]

Comment: Commenter states support for strong labor standards to prevent the exploitation of independent contractors in the truck driving sector. [T2-11]

Comment: Commenter urges CARB to include language in the resolution that addresses the problem of misclassified drivers and illegal contracting industry. [T2-35]

Agency Response: No changes were made to the regulation in response to these comments. See response discussion on the importance of labor issues and their impact on air quality, and staff's proposed changes to the large entity reporting requirement to ensure more potentially misclassified drayage workers are covered by the data reporting requirement for the entities that contract with them, in chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Future ZEV Policy – Employee Misclassification Impact on Trucking Emissions".

Future ZEV Policy – Disadvantaged Community Policy

Comment: Commenter states that poor air quality in low income communities must be addressed because these communities are usually located in areas subjected to more pollution which contribute to health issues in these communities. [T2-81]

Agency Response: No changes were made to the regulation in response to this comment. CARB recognizes the need to improve air quality in disadvantaged communities and sees the ACT regulation in combination with future ZE fleet rules as key components of helping these communities. The manufacturer sales requirement does not direct where trucks are to be placed but follows up with other requirements for fleets to report information about their vehicle home base locations.

Staff made numerous modifications to the original to increase the number of ZEVs deployed in California consistent with commenters and the Boards request. One of the many changes included the increase in class 7 and 8 tractor group sales percentages to ensure there are sufficient tractor sales to meet the goal of achieving an all zero-emission drayage fleet by 2035 which would directly benefit disadvantaged communities. For further details on the changes made to the original proposal to positively impact the environment and disadvantaged communities, please refer to chapter "Comments Received During Original Proposal's 45-Day Comment Period", section "Manufacturer ZEV Sales – Strengthen the ACT Proposal by Including Pickups Earlier and/or Increasing Sales Percentage Requirements".

In July 2017, Governor Brown signed Assembly Bill (AB) 617 to reduce air pollution and the associated health impacts in highly impacted communities. To implement AB 617, CARB Board approved the Community Air Protection Blueprint at a September 27, 2018 Board hearing, which includes strategies to reduce emissions and establishes Program requirements. For more information about CARB's implementation of AB 617, see <https://ww2.arb.ca.gov/our-work/programs/resource-center/ab-617-implementation>.

Out of Scope – Incentives and Funding Policies

Comment: Commenter states that there needs to be incentive funding for successful implementation of the ACT regulation. [T2-05]

Comment: Commenter states that in order to meet sales targets, there must be adequate vehicle and infrastructure incentives, in addition to the Fleet Rule which is currently in development. [T2-56]

Comment: Commenter states that there should be incentives provided for the use of low carbon fuels in ultra-low NOx trucks to accelerate CO2 reduction in the non-electric portion of fleets. [T2-75]

Comment: Commenter states there needs to be incentives and other policies that would align with the ACT regulation during this critical phase amidst the pandemic. [T2-88]

Comment: Commenter states there needs to be more funding for oversubscribed programs. [T2-92]

Comment: Commenter states that there needs to be support for smaller fleets. [T2-92]

Comment: Commenter states that incentives are needed to encourage the adoption of ZEVs to ensure a successful ACT regulation. [T2-104]

Comment: Commenter supports funding for small fleets and independent contractors. [T2-117]

Comment: Commenter supports funding for ZEV medium- and heavy-duty vehicles for either the fleet and/or manufacturers that achieve these higher measures and other advancements. [T2-117]

Comment: Commenter states that ZEV manufacturers are in critical need of more support and programs available for educating fleets, garage services, and dealerships in order to achieve the aimed adoption. [T2-117]

Agency Response: No changes were made to the regulation in response to these comments. Staff did not include incentives in the economic analysis, and the ACT regulation is not predicated on the availability of incentives. See discussion about CARB incentives policy in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Out of Scope – Incentive and Funding Policies”.

Out of Scope – Rule Abandons Natural Gas Infrastructure

Comment: Commenter states concern that the natural gas vehicles and infrastructure that they invested in are being abandoned by the current process. [T2-121]

Agency Response: No changes were made to the regulation in response to this comment. See staff discussion on how the ACT regulation does not require fleets invested in natural gas to strand their assets in chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Ignores CNG Investments and Impacts from Stranding Those Investments.”

Staff will evaluate the status of natural gas infrastructure during development of the future ZE fleet rule to the extent that the rule affects existing infrastructure.

Out of Scope – Support In-State RNG Production

Comment: Commenter states that a strategy that reduces GHG emissions by using in-state RNG fuel in refuse collection vehicles should be encouraged and approved by CARB. [T2-32]

Agency Response: No changes were made to the regulation in response to this comment. Commenter statement is out of the scope of the ACT regulation because it is asking for strategies on clean fuels rather than clean vehicles. The purpose of the ACT regulation is to foster and accelerate the adoption of medium- and heavy-duty ZEVs. CARB has other policies in place to encourage the adoption of low-carbon fuels such as the LCFS regulation. These other policies are incentivizing production of clean fuels including production within California and are the more appropriate path for accommodating these fuels.

Out of Scope – Infrastructure Effects on Small Businesses

Comment: Commenter states that the utilization of charging is impacting electric tariff rate designs resulting in a low load factor barrier which affects small fleets and will produce data gaps if a program is not developed to support small fleets. [T2-117]

Agency Response: This comment is outside of the scope of the modifications to the ACT rulemaking. It is too early to identify the impacts of large-scale EV charging on electricity tariff rates. The IOUs are currently developing Transportation Electrification Plans to ensure that new vehicle loads are integrated into the electrical system efficiently and identify strategies to improve existing EV-specific tariffs. In addition, future fleet rules will likely target larger businesses and segments that are well-suited for electrification in the earlier years, allowing sufficient time for infrastructure issues that may affect smaller fleets to be worked out.

Out of Scope – Encourage Infrastructure Deployment to Stimulate COVID Economy

Comment: Commenter states that due to the economic impact from COVID-19, it is important to encourage infrastructure development to stimulate the economy. [T2-79]

Agency Response: No changes were made to the regulation in response to this comment. See the discussion about infrastructure incentive programs from utilities and the State’s long-term development strategies, as well as how the large entity reporting requirement will support infrastructure development in chapter “Written Comments Submitted During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Infrastructure Concerns”, and discussion about staff’s recognition of COVID-19’s impact on the trucking industry and why staff feels the regulation’s requirements are feasible see chapter “Written Comments Received during the 30-Day Comment Period”, section “Economic Analysis – Impact of COVID-19”.

Out of Scope – Zero-Emission Powertrain Certification Performance Standards

Comment: Commenter supports strengthening performance standards through zero-emission powertrain certification in order to promote innovation in clean vehicles. [T2-75]

Agency Response: No changes were made to the regulation in response to this comment. Changes to the Zero-Emission Powertrain Certification program are outside the scope of the current proposal. In addition, see discussion on why performance-based metrics for zero-emission performance are not appropriate in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Set Performance-Based Targets for Zero-Emission Technologies”.

Out of Scope – Hydrogen Policies

Comment: Commenter states that to meet SIP and climate goals, more work is needed in areas such as addressing infrastructure issues, integrating hydrogen and fuel cell reversible electrolyzers, vehicle-to-grid integration, and the use of excess renewables in order to move towards 100 percent renewable hydrogen. [T2-33]

Comment: Commenter recommends adding renewable hydrogen production and hydrogen fueling stations in parallel efforts to support the ACT regulation. [T2-78]

Agency Response: No changes were made to the regulation in response to these comments. See discussion about infrastructure concern in chapter “Comments Received During Original Proposal’s 45-Day Comment Period”, section “Manufacturer ZEV Sales – Infrastructure Concerns”. Furthermore, see the discussion about manufacturing Hydrogen vehicles to meet emissions reduction goals in chapter “Written Comments Received during the 30-Day Comment Period”, section “Manufacturer ZEV Sales – Promote Hydrogen Fuel Cell Electric Vehicles and Associated Incentives”.

WRITTEN COMMENTS RECEIVED DURING THE SECOND 15-DAY COMMENT PERIOD

Comments in Support of the Regulation

Comment: Commenter supports staff's regulatory proposal to reduce emissions from trucks. [RP2-01, RP2-02, RP2-03, RP2-04, RP2-08]

Agency Response: Staff appreciates the supportive comments.

Comments Related to Documents Added to Record

Comment: Commenter states two documents added to record as part of the second 15-day comment period follow the flawed regulatory structure of the ACT Regulation by expecting a sales mandate alone to establish a commercial ZEV market. This ignores barriers such as the need for fleets to earn profit on the vehicle, and challenges from the lack of available infrastructure, lower utility of ZEVs, and higher lifecycle costs. [RP2-07]

Agency Response: No changes were made to the regulation in response to this comment. See staff's response to EMA's various issues with the regulatory structure of the ACT Regulation in chapter "Comments Received During Original Proposal's 45-Day Comment Period", sections "Manufacturer ZEV Sales – Pair Manufacturer and Fleet Requirements", "Manufacturer ZEV Sales - EMA Proposal", and "Manufacturer ZEV Sales – Higher Costs Are Barrier to ZEV Deployment".

Out of Scope – Various

Comment: Commenter provides comments on the regulatory process for the Advanced Clean Fleets regulation. Commenter repeats criticism of the ACT Regulation, including a perceived lack of addressing needed ZEV infrastructure and needed long-term funding to purchase the vehicles. [RP2-07]

Comment: Commenter states the ACT Regulation ignores: the lifetime benefits of fuel cell vehicles compared to battery electric vehicles; the payload, weight, and profit/operations benefits of fuel cells vs battery electric; and the environmental hazards and associated AB617 impacts of battery production and disposal. [RP2-05]

Comment: Commenter states auxiliary or PTO equipment usage and average hours of vehicle operations should be included in the Large Entity Reporting requirement to capture information that better characterizes their fleet usage compared to metrics such as average daily mileage. Commenter also states the regulation does not provide sufficient time to collect the data needed to report which creates additional workload for their staff, and requests CARB create outreach opportunities with fleet managers which will allow agencies to explain their operations and ensure the data is accurately reported by CARB. Commenter requests CARB update their analysis of current and future available ZEVs and sources of funding for government agency procurements. Commenter also requests CARB allow LCFS fuels to be counted as offsetting emissions due to already investing significant capital in alternative fuel vehicles and infrastructure. [RP2-06]

Agency Response: No changes were made to the regulation in response to these comments. Per the “Second Notice of Public Availability of Additional Documents and Information”, comments submitted during the 15-day period must be responsive to the notice or documents added to the record. These comments do not reference the notice or the documents added to the record and therefore are outside of the scope of the notice. Additionally, all topics commenters refer to have been addressed elsewhere in this document and responses can be found in the relevant sections.

V. PEER REVIEW

Health and Safety Code Section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. Specifically, the scientific basis or scientific portion of a proposed rule may be subject to this peer review process. Here, CARB determined that the rulemaking did not contain a scientific basis or scientific portion subject to peer review, and thus no peer review as set forth in section 57004 needed to be performed.

The regulation requires medium- and heavy-duty manufacturers to produce and sell ZEVs and requires large businesses, fleets, and government agencies to report information on their vehicles and how they use them. Requirements to build and sell ZEVs and report information do not establish “a regulatory level, standard, or other requirement for the protection of public health or the environment,” such as an ambient air quality standard or toxic exposure level. As such, it does not have a “scientific basis” or “scientific portions” that form the foundations of a regulatory standard or level.

The scientific studies and assessments used to analyze the potential environmental impacts of these regulations, such as the findings that diesel particulate is a toxic air contaminant and that greenhouse gases contribute to climate change were developed previously and subject to public review.