

# Title 13. California Air Resources Board

## Notice of Public Hearing to Consider Proposed Advanced Clean Cars II Regulations

The California Air Resources Board (CARB or Board) will conduct a public hearing at the date and time noted below to consider the proposed Advanced Clean Cars II (ACC II) rulemaking.

Date: June 9, 2022

Time: 9:00 A.M.

In-Person

Location: California Air Resources Board  
Byron Sher Auditorium  
1001 I Street, Sacramento, California 95814

Remote

Option: Zoom

This public meeting may continue at 8:30 a.m., on June 10, 2022. Please consult the public agenda, which will be posted ten days before the June 9, 2022, Board Meeting, for important details, including, but not limited to, the day in which this item will be considered, how to participate via Zoom, and any appropriate direction regarding a possible remote-only Board Meeting if needed.

### Written Comment Period and Submittal of Comments

In accordance with the Administrative Procedure Act, interested members of the public may present comments orally or in writing during the hearing and may provide comments by postal mail or by electronic submittal before the hearing. The public comment period for this regulatory action will begin on Friday, April 15, 2022. Written comments not submitted during the hearing must be submitted on or after Friday, April 15, 2022, and received **no later than Tuesday, May 31, 2022**. Comments submitted outside that comment period are considered untimely. CARB may, but is not required to, respond to untimely comments, including those raising significant environmental issues. The Board also encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action. Comments submitted in advance of the hearing must be addressed to one of the following:

Postal mail: Clerks' Office, California Air Resources Board  
1001 I Street, Sacramento, California 95814

[Electronic submittal](https://www.arb.ca.gov/lispub/comm/bclist.php): <https://www.arb.ca.gov/lispub/comm/bclist.php>

Please note that under the California Public Records Act (Gov. Code, § 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

Additionally, the Board requests but does not require that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

## **Authority and Reference**

This regulatory action is proposed under the authority granted in California Health and Safety Code, sections 38560, 39002, 39003, 39500, 39600, 39601, 39602.5, 43013, 43016, 43018, 43101, 43104, 43105, and 43600. This action is proposed to implement, interpret, and make specific sections 38562, 39002, 39003, 39602.5, 39667, 43000, 43013, 43016, 43018, 43018.5, 43100, 43102, 43104, 43105, 43106, 43107, 43204, 43205.5, and 43600.

## **Informative Digest of Proposed Action and Policy Statement Overview (Gov. Code, § 11346.5, subd. (a)(3))**

Existing statutes declare that emissions from motor vehicles with internal combustion engines are a significant public health threat. Existing statutes direct the Board to “endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources to accomplish the attainment of the state [ambient air quality] standards [for air pollution] at the earliest practicable date.”<sup>1</sup>

The Board has adopted numerous regulations, including those cited below that are proposed to be amended, to reduce harmful emissions from motor vehicles. These existing regulations establish emission standards for vehicle exhaust and evaporative emissions from vehicles with internal combustion engines. These existing regulations also require manufacturers of motor vehicles to produce and deliver for sale in California zero-emission vehicles in an increasing percentage of their total deliveries.

The Advanced Clean Cars II proposal regulations will amend and extend these existing regulations, identified below under Sections Affected, to further reduce harmful pollution from light- and medium-duty motor vehicles. The proposed regulations will increase the stringency of existing regulations to ensure emissions are reduced under a wider range of conditions under which vehicles are used and will transition new light-duty vehicle sales in California to 100% zero-emission by 2035. In addition to the substantive proposals, several conforming changes are proposed to related regulations to maintain consistency with existing regulations and maintain existing requirements in regulations that are not being proposed for amendment.

### **Sections Affected:**

Proposed adoption to California Code of Regulations, title 13, sections 1961.4, 1962.4, 1962.5, 1962.6, 1962.7, and 1962.8.

Proposed amendment to California Code of Regulations, title 13, sections 1900, 1961.2, 1961.3, 1962.2, 1962.3, 1965, 1968.2, 1969, 1976, 1978, 2037, 2038, 2112, 2139, 2140, 2147, 2317, 2903.

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<sup>1</sup> Health & Saf. Code, § 43018.

## **Documents Incorporated by Reference (Cal. Code Regs., tit. 1, § 20, subd. (c)(3)):**

Although there are a number of documents that are incorporated by reference in the above-mentioned adopted and amended regulations and their associated test procedures, which are themselves incorporated by reference into the regulations, only those documents that are newly incorporated by this rulemaking are noted below.

The following documents are incorporated by reference in the specified regulations:

- SAE International, 2017. J1772: "Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charger Coupler" as revised by SAE International in October 2017, in Section 1962.3 (c)(1) and Section 1962.4 (e)(3)(A)4.
- SAE International, 2015. SAE J1962: SAE J1962 "Diagnostic Connector", July 2016 (SAE J1962), in Section 1962.5(b)
- SAE International, 2022. SAE J1979-3 "E/E Diagnostic Test Modes: Zero Emission Vehicle Propulsion Systems on UDS (ZEVonUDS)", published draft March 2022 (SAE J1979-3), in Section 1962.5(b)
- SAE International, 2021. SAE J1979-DA, "Digital Annex of E/E Diagnostic Test Modes", April 2021, in Section 1962.5(b)
- SAE International, 2016. SAE J2012 "Diagnostic Trouble Code Definitions", December 2016 (SAE J2012), in Section 1962.5(b)
- SAE International, 2013. SAE J2012-DA\_201812 "Digital Annex of Diagnostic Trouble Code Definitions and Failure Type Byte Definitions", December 2018 (SAE J2012-DA), in Section 1962.5(b)
- SAE International, 2021. SAE J2984 "Chemical Identification of Transportation Batteries for Recycling" SEP 2021, (SAE J2984), in Section 1962.6 (b)(1)(A).
- SAE International, 2020. SAE J2288 "Life Cycle Testing of Electric Vehicle Battery Modules", November 2020 (SAE J2288), in Section 1962.6 (b)(1)(B)
- SAE International, 2017. J1930: "Electrical/Electronic Systems, Diagnostic Terms, Definitions, Abbreviations, and Acronyms - Equivalent to ISO/TR 15031-2," as revised by SAE International in March, 2017 (copyrighted), in Section 1969(f)(2)(K)1
- SAE International, 2014. J2403: "Medium/Heavy-Duty E/E Systems Diagnosis Nomenclature," as revised by SAE International in February, 2014 (copyrighted), in Section 1969(f)(2)(K)2
- UL, LLC, 2016. UL 2594. "Standard for Electric Vehicle Equipment" as adopted by UL in December 2016, in Section 1962.3 (c)(3)(D)
- International Standards Organization, 2015. ISO 18004:2015, "Information technology — Automatic identification and data capture techniques — QR Code bar code symbology specification", adopted February 2015, in Section 1962.6(b)(3)(B)
- CARB 2021a. "Data Record Reporting Procedures for Over-the-Air Reprogrammed Vehicles and Engines Using SAE J1979-2", December 2021, in Section 1962.5(c)(6)(B).
- "California 2015 Through 2025 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures And 2017 And Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures For Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles", of which the title has changed, dated [INSERT DATE], re-incorporated by reference with a changed title in sections 1961.2, 1965, 2037, and 2038, and is Appendix B-1 of the Initial Statement of Reasons

- “California 2026 And Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles”, dated [INSERT DATE], in sections 1961.2, 1961.4, 1965, 2037, 2038, 2140, and 2903, is Appendix B-2 of the Initial Statement of Reasons
- “California Evaporative Emission Standards and Test Procedures For 2001 Through 2025 Model Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, And Heavy-Duty Vehicles And 2001 And Subsequent Model Motorcycles”, adopted August 1999, amended [INSERT DATE], re-incorporated by reference with a changed title in section 1976, and is Appendix B-3 of the Initial Statement of Reasons
- “California Evaporative Emission Standards and Test Procedures For 2026 And Subsequent Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, And Heavy-Duty Vehicles”, dated [INSERT DATE], in section 1976, and is Appendix B-4 of the Initial Statement of Reasons
- “California Refueling Emission Standards and Test Procedures For 2001 And Subsequent Model Motor Vehicles”, adopted August 1999, amended [INSERT DATE], in Section 1978 to reflect new amended date, and is Appendix B-5 of the Initial Statement of Reasons
- “California Non-Methane Organic Gas Test Procedures For 2017 And Subsequent Model Year Vehicles”, dated [INSERT DATE], in Section 1961.4, and in Section 1961.2 to reflect new amended date, and is Appendix B-6 of the Initial Statement of Reasons
- “California Test Procedures For Evaluating Substitute Fuels And New Clean Fuels In 2015 And Subsequent Years” amended [INSERT DATE], in Section 2137 to reflect new amended date, and is Appendix B-7 of the Initial Statement of Reasons
- “California Exhaust Emission Standards and Test Procedures For 2018 Through 2025 Model Zero-Emission Vehicles and Hybrid Electric Vehicles, In The Passenger Car, Light-Duty Truck And Medium-Duty Vehicle Classes”, of which the title has changed, dated [INSERT DATE], re-incorporated by reference with a changed title in sections 1961.2 and 1962.2, and is Appendix B-8 of the Initial Statement of Reasons
- “California Test Procedures for 2026 and Subsequent Model Zero-Emission Vehicles and Plug-In Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes”, dated [INSERT DATE], incorporated by reference in section 1961.4 and 1962.4, and is Appendix B-9 of the Initial Statement of Reasons

The following documents are incorporated by reference in the "California 2015 through 2025 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles":

- SAE International, 2017. J1930: “Electrical/Electronic Systems, Diagnostic Terms, Definitions, Abbreviations, and Acronyms - Equivalent to ISO/TR 15031-2,” as revised by SAE International in March, 2017. Copyrighted.

The following documents are incorporated by reference in the "California 2026 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles":

- ASTM Standard D975, 2021. “Standard Specification for Diesel Fuel,” ASTM International, West Conshohocken, PA, 2010. Copyrighted.

- ASTM Standard D5769, 2010. "Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasoline by Gas Chromatography/Mass Spectrometry," ASTM International, West Conshohocken, PA, 2010. Copyrighted.
- SAE International, 2010. J1711: "Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-in Hybrid Vehicles," as revised by SAE International in June, 2010. Copyrighted.
- SAE International, 2017. J1930: "Electrical/Electronic Systems, Diagnostic Terms, Definitions, Abbreviations, and Acronyms - Equivalent to ISO/TR 15031-2," as revised by SAE International in March, 2017. Copyrighted.
- SAE International, 2017. J1979: "E/E Diagnostic Test Modes," as revised by SAE International in February, 2017. Copyrighted.
- SAE International, 2020. J2807: "Performance Requirements for Determining Tow-Vehicle Gross Combination Weight Rating and Trailer Weight Rating," as revised by SAE International in February, 2020. Copyrighted.

The following documents are incorporated by reference in the "California Evaporative Emission Standards and Test Procedures For 2026 And Subsequent Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, And Heavy-Duty Vehicles":

- "California 2026 And Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles", dated [INSERT DATE], Appendix B-2 to the Initial Statement of Reason (ISOR)

The following documents are incorporated by reference in the "California Refueling Emission Standards and Test Procedures For 2001 And Subsequent Model Motor Vehicles":

- "California 2026 And Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles", dated [INSERT DATE], Appendix B-2 to the Initial Statement of Reason (ISOR)
- "California Test Procedures for 2026 and Subsequent Model Zero-Emission Vehicles and Plug-In Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes", dated [INSERT DATE], Appendix B-9 to the Initial Statement of Reason (ISOR)
- "California Evaporative Emission Standards and Test Procedures For 2026 And Subsequent Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, And Heavy-Duty Vehicles", dated [INSERT DATE], Appendix B-4 to the Initial Statement of Reason (ISOR)

The following documents are incorporated by reference in the "California Non-Methane Organic Gas Test Procedures For 2017 And Subsequent Model Year Vehicles":

- "California 2026 And Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles", dated [INSERT DATE], Appendix B-2 to the Initial Statement of Reason (ISOR)

The following documents are incorporated by reference in the "California Test Procedures For Evaluating Substitute Fuels And New Clean Fuels In 2015 And Subsequent Years":

- “California 2026 And Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, And Medium-Duty Vehicles”, dated [INSERT DATE], Appendix B-2 to the Initial Statement of Reason (ISOR)

The following documents are incorporated by reference in the “California Test Procedures for 2026 and Subsequent Model Zero-Emission Vehicles and Plug-In Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes”

- “California 2026 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles”, dated [INSERT DATE], Appendix B-2 to the Initial Statement of Reason (ISOR)
- “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles”, amended [INSERT DATE], Appendix B-4 to the ISOR
- SAE International, 2021. SAE J1634. “Battery Electric Vehicle Energy Consumption and Range Test Procedure,” April 2021
- SAE International, 2010. SAE J1711. “Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-in Hybrid Vehicles,” June 2010
- SAE International, 2014. SAE J2572. “Recommended Practice for Measuring Fuel Consumption and Range of Fuel Cell and Hybrid Fuel Cell Vehicles Fueled by Compressed Gaseous Hydrogen” October 2014.

## Background and Effect of the Proposed Regulatory Action:

ACC II is critical to meeting California’s public health and climate goals and meeting State and federal air quality standards. Mobile sources are the greatest contributor to emissions of criteria pollutants and greenhouse gases (GHG) in California, accounting for about 80-percent of ozone precursor emissions and approximately 50-percent of statewide GHG emissions, when accounting for transportation fuel production and delivery.<sup>2</sup> The emission reductions from the ACC II proposal are critical to achieving multiple State programs and policies for reducing emissions and stabilizing the climate. The reductions are necessary to reach carbon neutrality by 2045 according to the draft 2022 Scoping Plan Update, which is set to be heard by the Board later in June 2022.<sup>3</sup> The 2022 State Strategy for the State Implementation Plan (SIP) Strategy also relies on reducing criteria pollutant emissions to attain the federal ambient ozone standards, including oxides of nitrogen (NOx) from

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<sup>2</sup> CARB 2021a. California Air Resources Board. 2021. “2020 Mobile Source Strategy.” Released September 28, 2021. Accessed January 31, 2022. [https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed\\_2020\\_Mobile\\_Source\\_Strategy.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf).

<sup>3</sup> For more information, see CARB Scoping Plan Website: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan>

passenger vehicles necessary to attain the smog standard for ozone by 2037 in the South Coast air basin.<sup>4</sup>

The ACC II regulatory proposal will drive the sales of zero emission vehicles (ZEV) and the cleanest-possible plug-in hybrid-electric vehicles (PHEV) to 100-percent in California by the 2035 model year, all while reducing smog-forming emissions from new ICEVs in the fourth iteration of the Low Emission Vehicle (LEV) regulation. Additionally, the proposed ZEV assurance measures, which include proposals to set minimum warranty and durability requirements, increase vehicle serviceability, and streamline charging and battery labeling, will help ensure consumers can successfully replace their ICEVs within California households with new or used vehicles that meet their needs for transportation with far fewer harmful emissions, thereby protecting the emission benefits of the program.

## **Objectives and Benefits of the Proposed Regulatory Action:**

The primary goals of the Proposed Regulation are to transition the new light-duty vehicle fleet to ZEVs and PHEVs and clean-up Internal Combustion Engine Vehicles (ICEVs) to reduce emissions of criteria, toxic, and greenhouse gas pollutants. Emissions from motor vehicle engines hurt public health, welfare, the environment, and the climate in multiple interrelated ways. Reducing emissions of one kind of pollutant supports reducing emissions of others and contributes to decreasing the severity of their impacts.<sup>5</sup> In addition, the Proposed Regulation would make the ZEVs more reliable by requiring minimum technical requirement and establishing ZEV assurance measures.

Following the Board's direction in 2017 after hearing an update on industry's success meeting the existing Advanced Clean Cars standards,<sup>6</sup> staff developed the proposed ACC II regulations. The proposals go beyond the existing state and federal GHG emission standards, which have been adopted by CARB and U.S. Environmental Protection Agency (EPA), respectively, and which will remain in effect<sup>7</sup>. Staff's proposal aims to further curb criteria, toxic, and GHG emissions through increased LEV program stringency, requirements to ensure emissions are reduced under real-world operating conditions that are not adequately addressed by existing test procedures, and by accelerating the transition to ZEVs beginning with the 2026 model year through both increased stringency of ZEV sales requirements and associated requirements to support wide-scale adoption and use. The proposed amendments do not encompass substantive updates to CARB's existing greenhouse gas emission standards that are part of the existing ACC program in Section 1961.3 of title 13 of the California Code of Regulations.

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<sup>4</sup> CARB 2022a. California Air Resources Board. 2022. "Draft 2022 State Strategy for the State Implementation Plan." Released January 31, 2022. Accessed February 1, 2022. [https://ww2.arb.ca.gov/sites/default/files/2022-01/Draft\\_2022\\_State\\_SIP\\_Strategy.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-01/Draft_2022_State_SIP_Strategy.pdf).

<sup>5</sup> See ISOR, Section II.A., Need for Emission Reductions, discussing the "climate penalty."

<sup>6</sup> CARB 2017a. California Air Resources Board. 2017. "Advanced Clean Cars Midterm Review: Resolution 17-3." March 24, 2017. Accessed March 4, 2022. [https://ww2.arb.ca.gov/sites/default/files/2020-02/acc\\_mtr\\_resolution\\_17\\_3\\_ac.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-02/acc_mtr_resolution_17_3_ac.pdf).

<sup>7</sup> CARB will continue to work closely with its federal agency partners as it considers whether to revise its GHG exhaust emission standards in a future proposal.

Staff's proposal builds upon many decades of CARB regulations seeking to reduce emissions from light-duty passenger cars and trucks. Transitioning to zero-emission technology for every on- and off-road mobile sector is essential for meeting near- and long-term emission reduction goals mandated by statute, with regard to both ambient air quality and climate requirements.<sup>8</sup> This has been affirmed by every planning document released by CARB in the last 10 years. Not only is zero-emission technology needed to reduce smog-forming emissions from mobile sources, it is also the key strategy for reducing greenhouse gases.

The proposed ACC II program would increase new vehicle sales of battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel-cell electric vehicles (FCEVs) and reduce emissions from the remaining new ICEVs sold. Increased use of ZEVs penetrating the California fleet will reduce emissions from every stage of the use of conventional combustion fuels for transportation. These are upstream emissions from petroleum extraction, transportation, refining, and distribution, called well-to-tank (WTT), and downstream, or tank-to-wheel (TTW) vehicle emissions from tailpipes and evaporative emissions from fuel systems. Together, these emissions are called well-to-wheel, or WTW.

The proposed regulations will decrease every category of emissions: GHGs; criteria pollutants like hydrocarbons (HC), oxides of nitrogen (NO<sub>x</sub>), and fine particulate matter (PM<sub>2.5</sub>); and toxic emissions. Through the proposed regulation, Californians will breathe air that will have undergone a cumulative reduction over the period of 2026 to 2040 of 30.1 tons NO<sub>x</sub>, 2.0 tons PM<sub>2.5</sub> and 57.1 MMT of CO<sub>2</sub> emissions (well-to-wheel emissions accounting for fuel production). The proposal will lead to an estimated 1,272 fewer cardiopulmonary deaths; 208 fewer hospital admissions for cardiovascular illness; 249 fewer hospital admissions for respiratory illness; and 639 fewer emergency room visits for asthma.

## **Comparable Federal Regulations:**

The proposed regulations address two aspects of motor vehicle emissions, one for exhaust and evaporative emissions from conventional vehicles and another for zero-emission vehicles. There are no comparable federal zero-emission vehicle regulations, and the regulations for conventional vehicles do not duplicate or conflict with federal regulations that address the same issues. To the extent they are different from existing federal regulations they are authorized by law and are justified by their substantial additional benefits to human health, public welfare, and the environment described throughout this Notice, the Initial Statement of Reasons, and other supporting material.

Currently, California's LEV III and U.S. EPA's Tier 3 vehicle emission standards and other emission-related requirements for conventional vehicles have largely been harmonized, to enable the regulated industry to design and produce a single product line of vehicles that can be certified to both U.S. EPA and CARB emission standards and sold in all 50 states.

However, as discussed in Chapter IV of the Staff Report: Initial Statement of Reasons (ISOR), the LEV III and Tier 3 vehicle emission standards do not adequately reduce excess emissions that occur during real-world driving conditions or prevent backsliding of emissions from ICEVs as the fleet transitions to ZEVs. The proposed LEV IV regulations focus on achieving

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<sup>8</sup> CARB 2021a.



additional control of emissions from light- and medium-duty vehicles under real-world driving conditions by ensuring the test procedures and standards address such conditions.

The proposed LEV IV regulations control emissions of criteria pollutants from the exhaust and fuel systems of conventional motor vehicles. They would apply to vehicles produced and delivered for sale in California beginning with the 2026 model year. They are more stringent than the existing federal Tier 3 standards for the same pollutants from motor vehicles for the 2025 and subsequent model years that were set by the U.S. EPA.<sup>9</sup> Thus, vehicles that comply with CARB's proposed standards will comply with federal emission standards. This does not present a conflict with federal regulations because CARB's standards may be more stringent than federal standards, under a provision in the Clean Air Act that direct U.S. EPA to waive federal preemption of California's motor vehicle emission standards except under limited circumstances not present here.<sup>10</sup> Moreover, under that provision vehicles that comply with CARB's standards are deemed to comply with federal standards for the same pollutants.<sup>11</sup>

The proposed ZEV regulations would require manufacturers to deliver for sale increasing percentages of ZEVs and PHEVs as a portion of their overall product deliveries between model years 2026 and 2034 and reach 100-percent ZEVs in 2035 (and after). There are no comparable federal standards for sales of zero-emission vehicles. Federal and state regulations for greenhouse gas emissions from manufacturers' fleets of motor vehicles allow manufacturers to get credit for the lack of exhaust emissions from ZEVs when determining compliance.<sup>12</sup> The ZEV regulation will facilitate compliance with federal and state greenhouse gas emission standards because emissions from ZEVs and PHEVs are considered in determining compliance with those standards.

To the extent that California's proposed LEV IV regulations differ from current federal Tier 3 regulations for the same pollutants and sources, or that the proposed ZEV regulations differ from either the current federal Tier 3 regulations or greenhouse gas emission standards, CARB has authority under state and federal law to set California's own standards to reduce emissions from motor vehicles to meet federal and state ambient air quality standards and climate change requirements and goals. It also has authority to require additional and separate reporting than required under federal law. California has plenary authority under the state and federal constitutions to protect public health and welfare. The California Health and Safety Code directs CARB to exercise this authority to reduce and eliminate harmful emissions from motor vehicles. These statutory obligations are identified in the authority citations for the proposed regulations. The federal Clean Air Act directs the Administrator of the U.S. EPA to waive federal preemption of California's motor vehicle emission standards when they meet the listed criteria, which have been met here.<sup>13</sup>

As shown in this notice and accompanying ISOR and analyses, the cost of the state regulations is justified by the benefit to human health, public welfare, and the environment. The proposed regulations will provide significant benefits for all these factors. They will

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<sup>9</sup> Cf. *Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards*, 79 Fed. Reg. 23,414, 23,417, April 28, 2014 [federal Tier 3 standards are harmonized with CARB's current LEV III standards through model year 2025]; 40 C.F.R. § 86.1811-17.

<sup>10</sup> Clean Air Act, § 209(b), 42 U.S.C. § 7543(b).

<sup>11</sup> Clean Air Act, § 209(b)(3), 42 U.S.C. § 7543(b)(3).

<sup>12</sup> Cal. Code Regs., tit. 13, § 1961.3; 40 C.F.R. §§ 86.1818-12 [emission standards]; 86.1866-12 [value for ZEVs].

<sup>13</sup> Clean Air Act, § 209(b), 42 U.S.C. § 7543(b).

reduce emissions harmful to human health and the environment. The value of the benefits outweighs the costs, and the regulations will reduce overall costs for transportation. These improvements and savings will improve the public welfare.

## **An Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code, § 11346.5, subd. (a)(3)(D)):**

During the process of developing the proposed regulatory action, CARB conducted a search of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing state regulations. They build upon, amend, and further existing state regulations of the same emission sources to reduce emissions beyond existing regulations.

## **Disclosure Regarding the Proposed Regulation**

### **Fiscal Impact/Local Mandate Determination Regarding the Proposed Action (Gov. Code, § 11346.5, subds. (a)(5)&(6)):**

The determinations of the Board's Executive Officer concerning the costs or savings incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulatory action are presented below.

Under Government Code sections 11346.5, subdivision (a)(5) and 11346.5, subdivision (a)(6), the Executive Officer has determined that the proposed regulatory action, through the purchase of new vehicles meeting the proposed standards, **would** create costs and savings to any State agency (although not in the current fiscal year), **would not** create costs or savings in federal funding to the State, and **would** create costs and savings to any local agency or school district (although not in the current fiscal year), whether or not reimbursable by the State under Government Code, title 2, division 4, part 7 (commencing with section 17500), or other nondiscretionary cost or savings to State or local agencies.

#### *Cost to any Local Agency or School District Requiring Reimbursement under section 17500 et seq.:*

The costs of the regulation, as passed through to local government through the purchase of new vehicles, are not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500) for several reasons. Foremost, they do not impose costs because they result in net savings from the total cost of ownership of vehicles.<sup>14</sup> To the extent they impose costs at the time of purchase, the proposed regulations apply generally to private and public entities, so they do not impose unique new requirements on the state and local agencies and are not a reimbursable mandate.<sup>15</sup> Further, they do not mandate a new program or a higher level of service of an existing program on local agencies or school districts. Public agencies are not required by the regulation to purchase vehicles. They do so at their own option. Therefore, the regulation does not impose

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<sup>14</sup> State Administrative Manual, § 6606.

<sup>15</sup> *County of Los Angeles v. State of California*, 43 Cal. 3d 46 (1987).

“costs mandated by the state” under section 17514 of the California Government Code.<sup>16</sup> Costs are also not reimbursable when they may be fully financed by local agencies raising their own fees.<sup>17</sup> Local government may raise fees, if needed, to address the costs of this regulation. Therefore, this is not a reimbursable mandate.

The State, counties, and cities could see some changes to revenue due to the Proposed Regulation. Many cities and counties in California levy a Utility Users Tax on electricity. By increasing the amount of electricity used, there will be an increase in the amount of utility user tax revenue collected. Fuel taxes on gasoline fund transportation improvements at the State, county, and local levels. Displacing gasoline fuel with electricity will decrease the amount of gasoline dispensed in the State, resulting in a reduction in fuel tax revenue.

Cost or Savings for State Agencies:

From 2026 to 2040, the net impact of the Proposed Regulation to State Agencies is a cost of \$940.4 million. This consists of \$14.9 billion in decreased gasoline tax revenue, but this is partially offset by \$132 million in increased energy resources fee revenue and \$12.1 billion in registration and license fee revenue.<sup>18</sup> This foregone revenue, which supports important government programs, may eventually be replaced by revenue from other sources, in which case these negative impacts to local governments would be diminished.

Other Non-Discretionary Costs or Savings on Local Agencies:

From 2026 to 2040, the net impact of the Proposed Regulation on local government is an approximate cost of \$12.2 billion. This is primarily driven by a decrease in gasoline sales and excise tax revenue of \$19.5 billion, but this is partially offset by an increase in utility user fee revenue of \$4.9 billion. This foregone revenue, which supports important government programs, may eventually be replaced by revenue from other sources, in which case these negative impacts to local governments would be diminished.

Housing Costs (Gov. Code, § 11346.5, subd. (a)(12)):The Executive Officer has also made the initial determination that the proposed regulatory action will not have a significant effect on housing costs. The only reasonably foreseeable impact on housing is an indirect cost for a vehicle owner that decides to installing electric vehicle supply equipment (EVSE, or a charger). This contributes to the net benefit in total cost of ownership for ZEVs and arguably increases the value of the property by adding a tangible improvement. The regulations do not impose any building standards, which are defined under Health and Safety Code section 18909.

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<sup>16</sup> *County of Contra Costa vs. State of California*, 177 Cal App 3d 62.79 (1986).

<sup>17</sup> See, e.g., *Clovis Unified School Dist. v. Chiang* (2010) 188 Cal App. 4th 794, 812; *Connell v. Superior Court* (1997) 59 Cal. App. 4th 382, 397-403; *County of Fresno v. State of California* (1991) 53 Cal. 3d 482, 487-88; Gov. Code, § 17556, subd. (d).

<sup>18</sup> Additional revenues in this category result from the Zero-Emission Registration Fee and the Vehicle License Fees, due to the vehicles becoming more costly at time of purchase.

## **Significant Statewide Adverse Economic Impact Directly Affecting Business, Including the Ability to Compete (Gov. Code, §§ 11346.3, subd. (a), 11346.5, subd. (a)(7), 11346.5, subd. (a)(8)):**

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons. Both California and out-of-state vehicle manufacturers will face the same requirements if they are to sell vehicles in California. Therefore, there is no resulting competitive disadvantage. The proposed regulations are not anticipated to affect the ability of California businesses that purchase ZEVs to compete with other states. Although there are estimated to be increased purchase costs for ZEVs in the early model years, there are substantial cost savings for operating BEVs. The proposed regulations are also not anticipated to result in a competitive disadvantage to service, repair, and refueling businesses. These businesses typically serve local markets and do not compete with businesses in other states.

## **Major Regulation: Statement of the Results of the Standardized Regulatory Impact Analysis (Gov. Code, § 11346.3, subd. (c)):**

In January 2022, CARB submitted a Standardized Regulatory Impact Analysis (SRIA) to the Department of Finance (DOF) for its review. CARB has updated the SRIA since the original submittal. The revisions are discussed below and in the ISOR, Section X.

### **(A) The creation or elimination of jobs within the state.**

The Proposed Amendments are estimated to result in an initial decrease in employment growth that is less than 0.2 percent of baseline employment and begins to diminish towards the end of the regulatory horizon. In 2040, the proposed regulations are estimated to result in job gains of 24,926 positions, primarily in the services, manufacturing and constructions sectors and 64,730 jobs foregone predominantly in the retail and government sectors. The net job impact of the proposed regulations in 2040 is estimated to 39,804 jobs foregone.

### **(B) The creation of new businesses or the elimination of existing businesses within the state.**

The trend of increasing demand for electricity in the electric power sector similarly sees large increases in sales, but its services are provided primarily by existing utilities. New utilities are not expected to be created to meet this increased demand. The decreasing trend in demand for gasoline has the potential to result in the elimination of businesses in this industry and downstream industries, such as gasoline stations and vehicle repair businesses, if sustained over time. The vehicle repair and maintenance service industry is estimated to see negative impacts, including dealerships that have service departments, as ZEVs become a greater portion of the fleet. This trend would suggest that the number of businesses providing the services may decrease along with the reduced demand.

(C) The competitive advantages or disadvantages for businesses currently doing business within the state.

While CARB is not aware of any evidence of the extent to which this is occurring under existing requirements, automakers that are already producing ZEVs may have an advantage in growing market share under more stringent ZEV requirements over manufacturers that have not yet come to market with a widely available product. Though some consumers may be holding out for a specific manufacturer's product, many consumers will purchase products that have wide distribution networks. As the requirements increase towards 100-percent ZEVs, this advantage may decline as every automaker invests in ZEV technology and products at a wide scale.

(D) The increase or decrease of investment in the state.

Private domestic investment consists of purchases of residential and nonresidential structures and of equipment and software by private businesses and nonprofit institutions. It is used as a proxy for impacts on investments in California because it provides an indicator of the future productive capacity of the economy.

The relative changes to growth in private investment for the proposed regulations show a decrease of private investment of about \$689 million in 2030, which trends positive resulting in an increase of about \$4.88 billion by 2040. Overall, there is a cumulative increase of \$10.9 billion from 2026-2040.

(E) The incentives for innovation in products, materials, or processes.

The manufacturer sales requirement for ZEVs as part of ACC II provides flexibilities, giving manufacturers the incentive to innovate and identify lower cost strategies for achieving the zero-emission requirement. For example, manufacturers are allowed to comply by selling ZEVs across multiple vehicle classifications, allowing each manufacturer to focus on products and areas of the market where they typically compete. Innovations leading to lower cost ZEV models likely will result in increased sales within the mass market. Additionally, manufacturers are incentivized to innovate and bring ZEV models to secure their place in popular or growing vehicle segments, responding to the requirement for the entire market to reach 100-percent in 2035.

(F) The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency.

The proposed regulation would increase new vehicle sales of BEVs, PHEVs and FCEVs through and after 2035 and reduce emissions from the remaining new ICEVs. Increased use of ZEVs penetrating the California fleet will reduce tailpipe and evaporative as well as upstream fuel production GHG, criteria (HC, NO<sub>x</sub>, PM<sub>2.5</sub>), and toxic emissions. Through the proposed regulation, California will see a cumulative reduction over the period of 2026 to 2040 of 30.1 tons NO<sub>x</sub>, 2.0 tons PM<sub>2.5</sub> and 57.1 MMT of CO<sub>2</sub> emissions (well-to-wheel emissions accounting for fuel production). The proposal will lead to 1,272 fewer cardiopulmonary deaths; 208 fewer hospital admissions for cardiovascular illness; 249 fewer hospital admissions for respiratory illness; and 639 fewer emergency room visits for asthma statewide.

(G) Department of Finance Comments on the SRIA and CARB's Responses.

CARB responds as follows to the comments of DOF on the SRIA prepared for the proposed regulations, as required by Government Code section 11346.5, subdivision (a)(10).

**DOF Comment:** The SRIA assumes that, without the regulations, ZEVs make up a constant 12 percent of new vehicle sales starting in 2030, after increasing from 10.7 percent in 2026. However, this is inconsistent with current market trends and existing state regulations and manufacturers' commitment towards electrification. The share of ZEVs in California increased from 0.5 percent in 2011 to 12.4 percent in 2021 (based on the California Energy Commission's (CEC) New ZEV Sales dashboard). The baseline should continue to reflect an increasing share of ZEV sales beyond 2030 or the SRIA should provide a justification for assuming a constant share, as the current approach likely overestimates costs and benefits.

**Staff response:** Traditionally, CARB staff estimate baseline projections of varying electric and other zero-emission vehicle technologies from what is expected as minimum compliance by automakers with California's ZEV regulation. The most recent version of CARB's vehicle fleet inventory used in the SRIA analysis, EMFAC2021, includes ZEV and PHEV sales from historic Department of Motor Vehicle (DMV) records for 2010 through 2019, and then projections for future years. The sales trends in EMFAC2021 show a growth in sales that can largely be attributed to the ZEV Regulation and automaker compliance, along with estimates from consumer-choice modeling of how buyers will respond to new vehicle market prices up to 2030. Although in recent years sales of ZEVs and PHEVs annually are higher than what is minimally required by the industry in each particular year, automakers rely on banked compliance credits for future year flexibility as ZEV Regulation requirements become stronger. In short, higher ZEV sales are a form of compliance but for use in a future model year.

However, for the revised analysis in this staff proposal, as described in Chapter X.A.2 of the accompanying ISOR, staff updated the ZEV technology fractions in the California baseline fleet based on new nationwide ZEV sales projections presented in the U.S. EPA Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026.<sup>19</sup> With this rulemaking, the U.S. EPA implemented new, more stringent GHG vehicle emission standards and estimated higher nationwide ZEV penetration rates in the future light-duty vehicle fleet to comply with them. CARB staff then adjusted the nationwide sales to reflect California's higher-than-average ZEV penetration rates. The result is a ZEV baseline projection that exceeds what is seen in today's California market, as well as the projections in EMFAC2021. CARB staff flatline this projection from 2026 model year onwards, consistent with adopted regulations that reach maximum stringency in 2026 and flatline.

**DOF Comment:** The SRIA assumes that private sector adoption of charging infrastructure will occur at a voluntary rate commensurate with the regulated new ZEV sales volume. Slower adoption may hinder consumers' willingness to purchase ZEVs and faster adoption may accelerate the rate at which benefits are realized. The SRIA should include a sensitivity

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<sup>19</sup> 86 Fed. Reg. 74,434, Dec. 30, 2021.

analysis to show how impacts may vary under different infrastructure adoption scenarios or justify the current adoption rate assumption.

**Staff response:** Alternative 1 in the ACC II SRIA was chosen in part to reflect potential slower ZEV sales as a result of consumer barriers such as ZEV fueling infrastructure. This alternative is based on survey data that showed 30 percent of survey respondents rejected considering electric vehicle technology and showed hesitation in purchasing ZEVs or PHEVs.<sup>20</sup> Although this is a survey of vehicle buyers in early 2015, an important reason in survey response hesitation was limited access to fueling infrastructure.

CARB staff do not have methods to estimate specific ZEV sales as a function of available ZEV fueling infrastructure. Therefore, staff believe the Alternative 1 in the SRIA is sufficient to document a sensitivity of ZEV sales that could occur if charging and hydrogen infrastructure challenges arise. However, as described earlier in the main report, staff are encouraged by the substantial public infrastructure investments proposed with Federal and State funds and believe that supports the feasibility of the main proposal.

Separate from this alternative, staff did evaluate varying fueling costs for BEV owners with and without home charging access, which represents different cost impacts from alternative uses of fueling infrastructure. This was described in the appendix of the SRIA, and example results of select BEV owners are shown in Section 3.5 of the SRIA. Specifically, when accounting for higher public fueling costs for a BEV owner without access to cheaper home electricity, the ten-year overall savings was projected to be \$5,109 for a 2035 model year BEV, while the BEV driver with home refueling saved \$6,683 over the same time period. This shows that varying use of charging infrastructure, and the corresponding varying prices for electricity, affect driver savings, but that BEV ownership is advantageous in both bounding cases.

**DOF Comment:** The SRIA should disclose assumptions regarding the potential for refiners to increase gasoline exports as a result of domestic demand for gasoline decreasing, as this would lead to smaller benefits from reduced upstream emissions.

**Staff response:** In Section 2.1.4 of the SRIA, staff described the emission impacts from the production and delivery of fuel (upstream emission impacts). As DOF notes, CARB staff assumed oil well and gasoline refinery production would decline proportionately to gasoline demand in-state as a result of the regulation. However, in Figure 3 of that section in the SRIA, the portion of upstream emission impacts associated with each fuel type is itemized. By looking at the “liquid fuels” data in this figure, the reader can see the level of in-state emissions that would not be reduced if oil and refinery activity were to continue under baseline conditions, instead of declining (a bounding condition relative to CARB staff’s assumption).

Although staff cannot predict fuel provider operation decisions in future years, several recent California refinery changes provide indications of what fuel providers may do as gasoline demand declines. As gasoline and diesel demand dropped during the early period of the

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<sup>20</sup> Kurani et al 2016. Kurani, Kenneth, Nicolette Caperello, and Jennifer Tyree Hapegeman. 2016. “New Car Buyers’ Valuation of Zero-Emission Vehicles: California.” Accessed October 18, 2021. [https://ww2.arb.ca.gov/sites/default/files/2020-04/12\\_332\\_ac.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-04/12_332_ac.pdf).

Covid-19 pandemic, the Marathon California refinery completely shut down instead of exporting fuel to other markets. Marathon is not restarting the refinery as the demand rises again, and instead is starting the permit process to entirely change the facility to produce renewable diesel (RD).<sup>21</sup> Similarly, the SF Rodeo refinery in California is planning to shut down and is planning to shift to RD or possibly renewable jet fuel. It is not planning to export excess capacity.<sup>22</sup>

**DOF Comment:** The SRIA should discuss why the “mid-demand” scenario from the CEC’s gasoline price projections is most representative despite significant anticipated reductions in gasoline demand, and the price trajectory of gasoline is assumed to be the same under the baseline and with the regulations.

**Staff response:** The “mid-demand” scenario was chosen as a reasonable scenario for this assessment because ex-ante we don’t have any knowledge of which of the three scenarios is more likely. Therefore, staff chose the mid-scenario, to avoid being overly pessimistic or overly optimistic. Based on CEC’s presentation of IEPR Transportation Energy Forecast<sup>23</sup> and on staff-level discussions between CARB and CEC, we understand that the difference in the gasoline price forecast across the three different scenarios is exogenous to the level electricity demand. This is why, counter-intuitively, the gasoline prices are higher in the “high [electricity]-demand” scenario, even though there is less gasoline demand relative to the mid-demand scenario. The “high-demand” scenario therefore, represents a gasoline price forecast that is most favorable to ZEV users, but not one that is most likely.

Staff does recognize that the significant reduction in gasoline demand has the potential to affect the price trajectory of gasoline in the future. However, trying to predict this effect is complex, and not something staff are able to do quantitatively. Gasoline prices will depend on the behavior of the world oil market, decisions of California refineries, and many other factors. To help better understand how much vehicle purchase behavior depends on increased vehicle prices and fuel cost-savings, staff has added an additional sensitivity analysis in Appendix D. This analysis suggests that even in a situation where ZEV buyers completely exclude any consideration of fuel savings, there is still a minimal change in ZEV purchases even with the increased vehicle cost.<sup>24</sup> This bounding exercise suggests that even in the eventuality that there is a decreased price trend for gasoline, it is not expected to have a significant impact on overall ZEV sales.

**DOF Comment:** Comprehensive estimates of disparate impacts must be included.

- a. Other groups of small businesses disproportionately impacted.

**Staff response:** CARB staff do not have specific information on how the purchase and ownership of ZEVs will create disproportionate impacts on small businesses. The change in

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<sup>21</sup> Marathon 2021. Marathon Petroleum. <https://www.marathonpetroleum.com/Newsroom/Company-News/Marathon-Petroleum-to-Proceed-with-Conversion-of-Martinez-Refinery-to-Renewable-Fuels-Facility/>

<sup>22</sup> Fallas 2021. <https://www.phillips66.com/newsroom/rodeo-renewed-right-project-at-the-right-time>

<sup>23</sup> CEC 2021. California Energy Commission. <https://www.energy.ca.gov/event/workshop/2021-12/session-2-iepr-commissioner-workshop-electricity-and-natural-gas-demand>

<sup>24</sup> Appendix D, Table 10 shows that the reduction in vehicle sales, without considering ZEV skepticism, is only reduced by as much as 0.8% in 2034.



costs for company fleets are directly proportional to the number of vehicles each company owns. Although there are increased purchase costs in the early model years, for BEVs, there are substantial cost savings for operating BEVs. It is possible that some small businesses may lack sufficient access to capital to cover the increased purchase cost regardless of vehicle operating savings that occur at later times, but CARB does not have data to evaluate these unique business cases. Further, it is possible some businesses (large or small) cannot rely on BEVs given the nature of fleet operations and the use of their vehicles, and instead will need to rely on PHEVs that provide a gasoline fuel option. PHEVs are not projected to have vehicle ownership cost savings over a ten-year period, and also are projected to have higher incremental purchase costs. However, CARB staff believe BEV technology is evolving rapidly, will serve the vast majority of company fleet needs in the earlier years, and ultimately meet all fleet needs.

Separately, CARB is aware of potential impacts to independent transportation-related business that currently provide retail services or repairs for conventional vehicles. In addition to what was described in Section 2.2 of the SRIA (“Benefits to Typical Businesses” such as Tier 1 suppliers and ZEV fueling providers), and Section 5.3.1 of the SRIA (“California Employment Impacts” including gasoline station retail operations), the proposed regulation has a provision intended to benefit independent vehicle repair services (as compared to franchise auto dealer repair shops). Moreover, businesses may adapt to market demands, such as gasoline stations becoming ZEV charging facilities and expanding related retail services to generate revenue, consistent with the current practice of many gasoline stations of selling retail and convenience products as a dominant profit center.<sup>25</sup> The ZEV Assurance provision that will require automakers to disclose service information is intended to make it easier for independent service businesses to transition to servicing ZEVs by reducing information barriers, such as data access and costs for employee training.

- b. Some state and local government entities may be disproportionately impacted.

**Staff response:** CARB staff are not able to precisely predict how the purchase and ownership of ZEVs may disproportionately impact state government agencies. State law (SB 498) already requires that no later than fiscal year 2024-205 the Department of General Services ensure 50-percent of light-duty vehicles purchased by state agencies are zero-emissions. Agencies for which ZEV purchases accelerate due to the proposed regulation may initially have increased purchase costs in the early model years, but there are also substantial cost savings for operating BEVs, which should ultimately benefit California residents by reducing state government vehicle costs. The State departments that own the greatest number of light-duty vehicles include the California Highway Patrol, Corrections and Rehabilitation, Fish and Wildlife, General Services, and Transportation. In 2019, these departments each owned over 10 percent of the non-disposed and non-confidential LDVs within the California State

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<sup>25</sup> Cockett 2021. Cockett, Z., *Why most gas stations don't make money from selling gas*, <https://thehustle.co/the-economics-of-gas-stations/> Sept. 12, 2021

Vehicle Fleet.<sup>26</sup> Overall, the State government is estimated to have net savings in total cost of ownership (TCO) from ZEVs of \$230.7 million from 2026-2040).<sup>27</sup>

CARB staff do not have specific information on how the purchase and ownership of ZEVs will create disproportionate impacts on local government agencies. The change in costs for local government fleets are directly proportional to the number of vehicles each county, city, or district owns. Although there are increased purchase costs in the early model years, for BEVs, there are substantial cost savings for operating BEVs, which is a benefit to residents of these localities.

c. Potential for disproportionate impacts on lower income individuals.

**Staff response:** As described in Chapter IX of the ISOR, ZEVs can be cheaper to own and maintain than conventional vehicles, reducing transportation costs that comprise a disproportionate share of spending for lower-income Californians. Proposed ZEV assurance and technical requirements enhance the likelihood that ZEVs will be more affordable, making them more likely to be used in place of conventional vehicles and thus reducing emissions. This includes a required convenience cord from automakers that can reduce the cost for home charging access, as well as a standardized fast charge port that will make charging infrastructure investments more efficient, which may lead to lower public charging costs.

Annual costs of ownership for BEVs specifically can be low, resulting in substantial savings, depending on the size of the BEV (vehicle class and battery size). A BEV passenger car with a range of 300-miles is less expensive than the comparable conventional vehicle in all ten years of ownership studied, and for the range of model years evaluated. Specifically, for both the 2026 model year and 2035 model year 300-mile BEV, the annual fuel and maintenance savings offset the annual loan costs of the vehicle purchase, even when accounting for higher electricity prices with a driver that solely relies on public charging prices.<sup>28</sup> These savings from ZEVs relative to income are significantly higher for low-income households, Black, Indigenous, and People of Color, and households in areas with higher levels of pollution.<sup>29</sup> Furthermore, cost reductions in new ZEVs could also lead to decreased used ZEV prices and cost parity for low-income households, where the higher rates of depreciation for first owners

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<sup>26</sup> DGS 2021. California Department of General Services. California State Fleet, 2015-2019. <https://data.ca.gov/dataset/california-state-fleet> January 6, 2021. Accessed March 28, 2022.

<sup>27</sup> Based on \$129.1 million in vehicle cost and \$359.8 million in operational savings (see Form 399 Attachment, Table 39).

<sup>28</sup> Note these trends are not observed with the PHEV and FCEV passenger vehicles evaluated.

<sup>29</sup> ICCT 2021a. Bauer, G., Hsu, C., Lutsey, N. The International Council on Climate and Transportation. When might lower-income drivers benefit from electric vehicles? Quantifying the economic equity implications of electric vehicle adoption. <https://theicct.org/publications/EV-equity-feb2021> February 2021. Accessed January 31, 2022.

will lead to larger benefits for second owners.<sup>30</sup><sup>31</sup> For details of the costs in these examples, refer to the BEV300 “without a home charger” in total cost of ownership tables, and the figures in Chapter IX of the ISOR.

Knowing the potential of ZEVs for positive distributional impacts, CARB’s light-duty vehicle funding programs will likely shift to a further focus on harder to reach consumer segments and used vehicles, providing more benefit to communities with environmental justice concerns.<sup>32</sup> Additionally, the regulation seeks to work in tandem with incentives and other programs to advance access to ZEVs for lower-income Californians. Staff are proposing regulatory incentives for automakers that take action to help improve environmental justice and equity outcomes as described in section III.C.5. Optional environmental justice vehicle values offered under the proposed ZEV regulation of the ACC II program are aimed at complementing CARB’s equity incentive programs. These actions include providing ZEVs and PHEVs at a discount to community clean mobility programs; retaining used ZEVs after leases in the California market for low-income vehicle purchasing and finance assistance programs; and offering lower-priced new ZEVs to the market. These optional provisions will help increase affordable access to ZEVs, particularly in communities with environmental justice concerns in California.

### **Business Reporting is Necessary for the Health, Safety, and Welfare (Gov. Code, §§ 11346.5, subd. (a)(11); 11346.3, subd. (d)):**

In accordance with Government Code sections 11346.5, subdivisions (a)(11) and 11346.3, subdivision (d), the Executive Officer finds the reporting requirements of the proposed regulatory action which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California. The various reports required by the proposed regulations ensure that CARB has the information it needs about the emissions performance of the vehicles produced and delivered for sale in California to verify compliance with the regulations. In this way, CARB will be able to confirm that emissions are reduced as intended.

### **Cost Impacts on Representative Private Persons or Businesses (Gov. Code, § 11346.5, subd. (a)(9)):**

In developing this regulatory proposal, CARB staff evaluated the potential economic impacts on representative private persons or businesses. These impacts are described more fully in the accompanying Economic and Fiscal Impact Statement, Form 399, for the proposed regulations.

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<sup>30</sup> Busch 2021. Busch, C. Energy Innovation Policy & Technology LLC. Used Electric Vehicles Deliver Consumer Savings Over Gas Cars: Policy Implications and Total Ownership Cost Analysis for Non-Luxury Used Cars Available To California Consumers Today. <https://energyinnovation.org/wp-content/uploads/2021/06/Used-Electric-Vehicles-Deliver-Consumer-Savings-Over-Gas-Cars.pdf> June 2021. Accessed January 31, 2022.

<sup>31</sup> ICCT 2021b. Tankou, A., Lutsey, N., & Hall, D. The International Council on Climate and Transportation. Understanding and Supporting the Used Zero-Emission Vehicle Market. <https://theicct.org/wp-content/uploads/2021/12/ZEVA-used-EVs-white-paper-v2.pdf> December 2021. Accessed January 31, 2022.

<sup>32</sup> CARB 2021. California Air Resources Board. Proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives. [https://ww2.arb.ca.gov/sites/default/files/2021-10/fy21-22\\_fundingplan.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-10/fy21-22_fundingplan.pdf) Released October 2021. Accessed January 31, 2022.

The primary businesses affected by the Proposed Regulation are manufacturers that sell on-road light-duty vehicles in the State of California. At this time, there are 26 companies that would be subject to this regulation. All major manufacturers are based outside of California except Tesla, and none are small businesses. The cost to manufacturers will be high per vehicle in the early years, but significantly decrease over time by 2035.

CARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. Indirectly affected are California consumers that buy new vehicles and eventually used vehicles. Between 2026 and 2040, the Proposed Regulation is estimated to result in additional costs to businesses of \$30.2 billion, or \$2.0 billion on average per year. For a representative individual or business buying a vehicle subject to the proposed regulations once they are fully implemented, the average initial cost increase (vehicle cost plus sales tax) is estimated to be about \$1,460. The ongoing operating costs (electricity, hydrogen fuel, insurance, and registration) are estimated to be \$399 per year and once accounting for cost-savings (gasoline, maintenance & repair, and vehicle-to-grid services), results in a net savings of \$298 per year.

The total cost of ownership (TCO) is also estimated for individuals and entities purchasing these vehicles. Such entities will incur increased vehicle costs as summarized above but will generate vehicle operational cost savings that outweigh the costs. For a ZEV in 2035, the initial savings are nearly immediate and cumulative savings over ten years exceed \$7,500. Overall, between 2026 and 2040, the TCO is estimated to be a net cost savings, statewide, of \$81.8 billion, or \$5.9 billion on average per year.

### **Effect on Small Business (Cal. Code Regs., tit. 1, § 4, subds. (a) and (b)):**

For the reasons explained in the accompanying Economic and Fiscal Impact Statement, the Executive Officer has also determined under California Code of Regulations, title 1, section 4, that the proposed regulatory action would not affect small businesses. The proposed LEV regulations do not apply directly to small businesses. Staff is proposing changes to the California Service Information Regulation, California Code of Regulations, section 1969, that are expected to increase participation of small independent repair shops in servicing ZEVs through the transition to ZEV technologies.

### **Consideration of Alternatives (Gov. Code, § 11346.5, subd. (a)(13)):**

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board, or that has otherwise been identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law. As explained in the accompanying ISOR, the proposed regulations are the most effective and least burdensome means of achieving the purposes of the proposal.

### **State Implementation Plan Revision**

If adopted by CARB, CARB plans to submit the proposed regulatory action to the U.S. EPA for approval as a revision to the California State Implementation Plan (SIP) required by the

federal Clean Air Act (CAA). The adopted regulatory action would be submitted as a SIP revision because it amends regulations intended to reduce emissions of air pollutants in order to attain and maintain the National Ambient Air Quality Standards promulgated by U.S. EPA pursuant to the CAA.

## Environmental Analysis

CARB, as the lead agency for the proposed regulations, has prepared a draft environmental analysis (EA) under its certified regulatory program<sup>33</sup> to comply with the requirements of the California Environmental Quality Act (CEQA).<sup>34</sup> The draft EA assesses the potential for significant adverse and beneficial environmental impacts associated with the proposed actions and provides a programmatic environmental analysis of the reasonably foreseeable compliance responses that could result from implementation of the proposed regulations.

The EA concluded implementation of the proposed regulations could result in: beneficial impacts to air quality (long-term operational) and greenhouse gas emissions; less than significant impacts, or no impacts, to energy demand, land use, mineral resources, population and housing, public services, recreation, and wildfire; and potentially significant adverse impacts to aesthetics, agricultural and forest resources, air quality (short-term construction related), biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation, tribal cultural resources, and utilities and service systems.

The draft EA, included as Appendix E to the ISOR, is entitled *Draft Environmental Analysis for the Proposed Advanced Clean Car II Program*. Written comments on the draft EA will be accepted during a 45-day public review period starting on April 15, 2022 and ending on May 31, 2022.

## Special Accommodation Request

Consistent with California Government Code section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language; and
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerks' Office at [cotb@arb.ca.gov](mailto:cotb@arb.ca.gov) or (916) 322-5594 as soon as possible, but no later than ten business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

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<sup>33</sup> California Code of Regulations, title 17, sections 60000 through 60008.

<sup>34</sup> See Public Resources Code § 21080.5.

- Un intérprete que esté disponible en la audiencia;
- Documentos disponibles en un formato alternativo u otro idioma; y
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al [cotb@arb.ca.gov](mailto:cotb@arb.ca.gov) o (916) 322-5594 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo.

TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

## Agency Contact Persons

Inquiries concerning the substance of the proposed regulatory action may be directed to the agency representative Anna Wong, Manager, ZEV Market Advancement Section, at (279) 208-7203 or (designated back-up contact) Shobna Sahni, Chief, New Vehicle/Engines Program Branch, at (951) 542-3369.

## Availability of Documents

CARB staff has prepared a ISOR as required under the Administrative Procedure Act for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: Public Hearing to Consider Proposed Advanced Clean Cars II Regulations.

Copies of the ISOR and the full text of the proposed regulatory language, may be accessed on CARB's website listed below, on Tuesday, April 12, 2022. Please contact Bradley Bechtold, Regulations Coordinator, at [bradley.bechtold@arb.ca.gov](mailto:bradley.bechtold@arb.ca.gov) or (279) 208-7266 if you need physical copies of the documents.

Because of current travel, facility, and staffing restrictions, the California Air Resources Board's offices have limited public access. Pursuant to Government Code section 11346.5, subdivision (b), upon request to the aforementioned Regulations Coordinator, physical copies would be obtained from the Public Information Office, California Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814.

Further, the agency representative to whom non-substantive inquiries concerning the proposed administrative action may be directed is Bradley Bechtold, Regulations Coordinator, (279) 208-7266. The Board staff has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

## Hearing Procedures

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Government Code, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340).

Following the public hearing, the Board may vote on a resolution directing the Executive Officer to: make any proposed modified regulatory language that is sufficiently related to the

originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action, and any additional supporting documents and information, available to the public for a period of at least 15 days; consider written comments submitted during this period; and make any further modifications as may be appropriate in light of the comments received available for further public comment. The Board may also direct the Executive Officer to: evaluate all comments received during the public comment periods, including comments regarding the Draft Environmental Analysis, and prepare written responses to those comments; and present to the Board, at a subsequently scheduled public hearing, the final proposed regulatory language, staff's written responses to comments on the Draft Environmental Analysis, along with the Final Environmental Analysis for action; or adopt final regulatory language, staff's responses to the Draft Environmental Analysis, and the Final Environmental Analysis for the proposed regulations.

## **Final Statement of Reasons Availability**

Upon its completion, the Final Statement of Reasons (FSOR) will be available, and copies may be requested from the agency contact persons in this notice, or may be accessed on CARB's website listed below.

## **Internet Access**

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on CARB's website for this rulemaking at <https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii>

California Air Resources Board



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Richard W. Corey  
Executive Officer

Date: March 29, 2022