

Proposed
State of California
Air Resources Board

Advanced Clean Cars II (ACC II) Regulations

Resolution 22-9

June 9, 2022

Agenda Item No.: 22-8-1

Whereas, sections 39600 and 39601 of the Health and Safety Code authorize the California Air Resources Board (CARB or Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

Global Warming is a Significant Threat

Whereas, the Legislature has enacted the California Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32),¹ which declares that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California;

Whereas, AB 32 added section 38501 to the Health and Safety Code, which expresses the Legislature's finding that global warming poses a serious threat and the Legislature's intent that the Board coordinate with State agencies and consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing AB 32; and design emissions reduction measures to meet the statewide emissions limits for greenhouse gases (GHG) in a manner that minimizes costs and maximizes benefits for California's economy, and maximizes additional environmental and economic co-benefits for California, and complements the State's efforts to improve air quality;

Whereas, California suffers a wider range of the effects of climate change and to a greater degree than other states in the nation, including extreme and prolonged drought, dwindling supplies of fresh water from loss of snowpack, more extensive and severe wildfires, and rising storm surges and sea levels;²

Whereas, the increase in the size and severity of California wildfires is directly responsible for thousands of tons of the criteria air pollutants designated under the federal Clean Air Act³ of

¹ Assembly Bill 32, Stats. 2006, ch. 488, Health & Saf. Code § 38500, et seq.

² See, e.g., discussion of evidence in 78 Fed. Reg. 2,112, 2,129 (Jan. 9, 2013); State of California Governor's Office of Planning and Research, California Energy Commission, California Natural Resources Agency, California's Fourth Climate Change Assessment Statewide Summary Report. (Report #: SUM-CCCA4-2018-013, August 27, 2018), available at: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf.

³ 42 U.S.C. § 7401, et seq.

particulate matter (PM), oxides of nitrogen (NO_x), and volatile organic compounds released into our atmosphere, which extend well beyond our borders;⁴

Whereas, as the United States Environmental Protection Agency (U.S. EPA) has recognized, the effects of climate change and rising temperatures from GHG emissions make it more difficult to reduce ozone air pollution that threatens public health;⁵

Whereas, in recognition of the devastating impacts of climate-changing emissions on California, Governor Arnold Schwarzenegger, in June 2005, enacted Executive Order S-3-05 to establish the following targets to reduce GHG emissions: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emission to 80 percent below 1990 levels;

Whereas, Governor Brown in Executive Order B-16-12 reaffirmed a 2050 GHG emission reduction target stipulating specifically that the transportation sector achieve an 80 percent reduction below 1990 levels;

Whereas, Governor Brown in Executive Order B-30-15 established an interim GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California achieves meaningful early emission reductions on a trajectory to meet the 2050 targets;

Whereas, section 38505 of the Health and Safety Code defines GHGs as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride;

Whereas, section 38510 of the Health and Safety Code designates CARB as the State agency charged with monitoring and regulating sources of GHG emissions in order to reduce these emissions;

Whereas, sections 38560 and 38562 of the Health and Safety Code direct the Board to adopt regulations in an open public process to achieve the maximum technologically feasible and cost-effective reductions in GHG emissions in furtherance of achieving the statewide limit and, to the extent feasible and in furtherance of achieving the statewide GHG emissions limit, to design its GHG regulations in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce GHG emissions;

Whereas, section 38580 of the Health and Safety Code designates CARB as the agency charged with monitoring compliance and enforcing any regulation adopted by the Board pursuant to Division 25.5 of the Health and Safety Code;

Motor Vehicle Pollution Threatens Public Health

Whereas, section 39003 of the Health and Safety Code directs the Board to systematically attack the serious air pollution problems caused by motor vehicles;

⁴ See *Statewide Summary*, *id.*

⁵ See 74 Fed. Reg. 32,744, 32,763 (July 8, 2009).

Whereas, section 43000 of the Health and Safety Code states the Legislature's finding that dependence on petroleum-based fuels in motor vehicles substantially degrades air quality and threatens public health;

Whereas, sections 43013, 43100, 43101, 43102, and 43104 of the Health and Safety Code authorize the Board to adopt emission standards, in-use performance standards, and test procedures to control air pollution caused by motor vehicles and motor vehicle engines, including light- and medium-duty motor vehicles;

Whereas, section 43013(a) of the Health and Safety Code directs the Board to "adopt and implement motor vehicle emission standards, in-use performance standards, and motor vehicle fuel specifications for the control of air contaminants and sources of air pollution which the state board has found to be necessary, cost effective, and technologically feasible ... unless preempted by federal law;"

Whereas, section 43018(a) of the Health and Safety Code directs the Board to achieve the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to accomplish the attainment of state standards at the earliest practicable date;

Whereas, section 43018(c) of the Health and Safety Code provides that in carrying out section 43018, the Board shall adopt standards and regulations that will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuels, including but not limited to reductions in motor vehicle exhaust and evaporative emissions, and reductions in in-use vehicular emissions through durability, performance improvements, and specification of vehicular fuel composition;

Whereas, section 43104 of the Health and Safety Code directs the Board to adopt test and other procedures necessary to determine whether vehicles are in compliance with the Board's emissions standards;

Whereas, section 43105 of the Health and Safety Code provides that no new motor vehicle or engine required to meet the Board's vehicle emission standards shall be sold to the ultimate purchaser, ordered or delivered for sale to the ultimate purchaser, or registered in this state if the manufacturer has violated emission standards or test procedures and has failed to take corrective action, which may include recall of vehicles or engines, specified by the Board in accordance with its regulations; and provides that the Board shall establish procedures for determining, and the facts constituting, compliance or failure of compliance;

Whereas, section 43106 of the Health and Safety Code requires each new motor vehicle or new motor vehicle engine required to meet the Board's emission standards to be, in all material respects, substantially the same in construction as the test motor vehicle or engine that has been certified by the Board to be sold or offered for sale in California;

Whereas, mobile sources in California are the greatest contributor to emissions of criteria pollutants, including fine particulate matter (PM_{2.5}) and the precursors for ground-level ozone of oxides of nitrogen (NO_x) and hydrocarbons (HC), and to emissions of GHGs, 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;

The National Ambient Air Quality Standards Require Action to Protect Public Health

Whereas, sections 39602 and 39602.5 of the Health and Safety Code designate the Board as the air pollution control agency for the State of California for all purposes under federal law, including the agency responsible for preparing the state implementation plan (SIP) required by the Clean Air Act, and direct the Board to adopt regulations to attain and maintain the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants established under the Clean Air Act;

Whereas, section 39602 of the Health and Safety Code also provides that the SIP shall include only those provisions necessary to meet the requirements of the Clean Air Act;

Whereas, CARB and California have greatly improved air quality in the state over the past half century. Smog alerts, which peaked at one almost every other day during the 1960s, have been eliminated. During this time, the State has grown its economy while becoming a world leader in environmental policies and clean technologies;

Whereas, in March 2017, CARB approved the 2016 State Strategy for the California State Implementation Plan (2016 SIP), which included a commitment to propose the Advanced Clean Cars II program as a proposed measure to support attainment and maintenance of the NAAQS in California;

Whereas, to attain the NAAQS of 70 ppb the 2022 State SIP Strategy will require additional emission reductions, beyond the 2016 State SIP Strategy commitment, like those being proposed in Advanced Clean Cars II;

All Californians Deserve Equitable Access to Clean Air and the Benefits of Zero-Emission Technology

Whereas, despite California's great progress reducing air pollution, more than half (21 million out of nearly 40 million) of all Californians live in urban and rural downwind areas that exceed the most stringent NAAQS for ozone of 70 parts per billion (ppb) and California has the only two areas in the nation that are designated in Extreme nonattainment of this standard;

Whereas, despite the significant public health improvements produced by CARB's air quality programs, California's disadvantaged communities, low-income communities, and communities of color continue to experience disproportionate impacts from air pollutants and GHGs, among other inequities that increase residents' health vulnerabilities;

Whereas, section 44391.2 of the Health and Safety Code requires CARB to develop a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden, including mobile source elements to reduce emissions in high emissions exposure communities selected by the Board;

Whereas, CARB's statewide strategy to address these goals, known as the Community Air Protection Program Blueprint, identifies Advanced Clean Cars II in helping to reduce exposure to criteria pollution and toxic air contaminants in burdened communities;

Whereas, the Legislature enacted AB 197,⁶ which declares that continuing to reduce GHG emissions is critical for protecting all areas of the State, but especially for the State's most disadvantaged communities, as those communities are affected first and most frequently by adverse impacts of climate change, including increased frequency of extreme weather events such as drought, heat waves, and flooding;

Whereas, AB 32 added section 38565 to the Health and Safety Code, directing CARB to ensure, where applicable and to the extent feasible, that CARB's GHG emission reduction regulations and programs direct public and private investment toward the most disadvantaged communities in California and provide an opportunity for community institutions to benefit from statewide efforts to reduce GHG emissions;

Whereas, improving access to clean transportation and mobility options for low-income households and communities most impacted by pollution supports equity and environmental justice and is key in reducing emissions;

Whereas, CARB recognizes the imperative to meaningfully integrate equity and environmental justice considerations into programs and policies in partnership with affected communities;

Whereas, new zero-emission vehicles (ZEVs) commonly are resold as used ZEVs, which generally cost significantly less than new models and can provide affordable mobility and increased access to the cleanest technologies for low-income households and communities when used vehicles are reliable, durable, and serviceable;

Whereas, Health and Safety Code sections 44124.5 and 44258.4 create or direct CARB to create several incentive programs to increase low-income Californians' access to ZEVs, including Clean Cars 4 All, Clean Mobility Options Voucher Pilot Project, Sustainable Transportation Equity Project, and the Financing Assistance for Lower-Income Consumers Project;

Whereas, promoting benefits for air quality, mobility, and access to clean transportation for disadvantaged and low-income communities in the context of the Advanced Clean Cars II regulation is appropriate and essential in light of longstanding disparities in exposure to transportation pollution, transportation access, and the potential to improve public health and quality of life by expanding communities' access to cleaner technologies and broader transportation choices;

The Advanced Clean Cars Program Effectively Reduced Air Pollution

Whereas, in March 2012, the Board approved the Advanced Clean Cars program, which includes: the Low-Emission Vehicle III (LEV III) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles for model years 2015 through 2025, and amendments to the Zero-Emission Vehicle (ZEV) regulation, which acts as a focused technology-forcing piece of the Advanced Clean Cars program by requiring manufacturers to

⁶ Assembly Bill 197, Stats. 2016, ch. 250, Health and Safety Code § 39510, et seq.

produce increasing numbers of pure ZEVs and plug-in hybrid electric vehicles in the 2018 through 2025 model years;⁷

Whereas, fifteen states, consisting of Colorado, Connecticut, Maine, Maryland, Massachusetts, Minnesota, Nevada, New Jersey, New York, New Mexico, Oregon, Rhode Island, Vermont, Virginia, and Washington, through Section 177 of the federal Clean Air Act, have adopted California's ZEV regulations, and two additional states, Pennsylvania and Delaware have adopted California's LEV regulations and are considering adopting California's ZEV regulations and, when combined with California, account for about 40 percent of the population and of new light-duty vehicle sales in the United States;⁸

Whereas, upon the adoption of Advanced Clean Cars, the Board directed the Executive Officer (in Resolution 12-11) to conduct a comprehensive midterm review (MTR) of three elements: (1) the ZEV regulation, (2) the 1 milligram per mile particulate matter (PM) standard, and (3) the light-duty vehicle GHG standards for 2022 and later model years. Staff's MTR was conducted at the same time as staff also participated in a related midterm evaluation by the U.S. EPA of the federal light-duty vehicle GHG standards for the 2022 through 2025 model years;

Whereas, upon completion of staff's MTR and the presentation of findings in March 2017, the Board concluded in Resolution 17-3 the following:

- California's GHG vehicle standards remained appropriate and achievable for the 2022 through 2025 model years;
- California's ZEV requirements as adopted in 2012 are appropriate and will remain in place to develop the market;
- Complementary policies are needed and should be expanded to help support an expanding ZEV market; and
- California's PM standard is feasible but further action is needed to ensure robust control;

Whereas, upon completion of staff's MTR and the presentation of findings in March 2017, the Board in Resolution 17-3 directed staff to immediately begin rule development for more stringent standards for the 2026 and subsequent model years;

Whereas, the current ZEV regulation sets annual credit requirements that can be fulfilled by manufacturers by the production of a ZEV or plug-in hybrid, which earns variable credit based on vehicle attributes, the most influential being electric vehicle range. Manufacturers

⁷ CARB, Reso. No. 12-21, March 22, 2012, adopting amendments to Cal. Code Regs., tit. 13, §§ 1900, 1956.8, 1960.1, 1961, 1961.1, 1962.1, 1962.2 (renumbered to 1962.3), 1965, 1968.2, 1968.5, 1976, 1978, 2037, 2038, 2062, 2112, 2139, 2140, 2145, 2147, 2235, 2300, 2302, 2303, 2303.5, 2304, 2307 2308, 2309, 2311, 2311.5, 2312, 2313, 2314, 2315, 2317, and 2318; new §§ 1961.2, 1961.3, 1962.2, and 2306.1; and repealing §§ 2306, 2310, 2316, and 2317.

⁸ United States Census Bureau, Population Division, Annual Estimates of the Resident Population for the United States, Regions, States, District of Columbia, and Puerto Rico: April 1, 2020 to July 1, 2021, [NST_EST2021_POP: Annual Estimates of... - Census Bureau Table](#), accessed May 18, 2022; CARB, States that have Adopted California's Vehicle Standards Under Section 177 of the Federal Clean Air Act, <https://ww2.arb.ca.gov/sites/default/files/2022-03/%C2%A7177%20States%20%283-17-2022%29%20%28NADA%20sales%29.pdf>.

have been over-complying with the ZEV regulation requirements since the 2012 model year resulting in significant ZEV regulation credit banks. Under current rules, manufacturers may carry forward surplus credits without expiration;

Zero Emission Vehicle Advancements

Whereas, recognizing California's leadership in zero-emission transportation, in 2020 Governor Gavin Newsom issued Executive Order N-79-20, which establishes the State's goal that 100 percent of in-state sales of new passenger cars and trucks be zero emission (ZE) by 2035; directs CARB to develop and propose a regulation to accomplish this goal, acting consistently with technical feasibility and cost-effectiveness; advances strategies for a just economic transition away from fossil fuels; and declares that the State must prioritize clean transportation solutions that are accessible to all Californians, particularly those who are low-income or experience a disproportionate share of pollution;

Whereas, manufacturers continue to invest heavily in zero emission technology in response to California's ZEV regulation and international regulations, leading to technology improvements that have resulted in lower cost batteries and other electric vehicle componentry. This has enabled nearly every manufacturer to accelerate plans to bring to market more long-range ZEVs in more market segments and highly capable plug-in hybrid electric vehicles (PHEVs);

Whereas, recent findings indicate that battery costs will continue to decline to \$100 per kilowatt hour by 2026 with further cost declines thereafter;

Whereas, manufacturers are moving to dedicated battery-electric vehicle (BEV) platforms, which allows integration of the battery pack entirely within the vehicle floor structure to reduce vehicle weight, reduce manufacturing costs, and increase available passenger and cargo volume;

Whereas, manufacturers are increasing battery pack capacity and energy efficiency, which have led to an increase in range and a reduction in vehicle costs;

Whereas, fuel cell electric vehicles have also significantly improved. The United States Department of Energy (U.S. DOE) reports that fuel cell stack costs have fallen 70 percent since 2008. Fuel cell systems have also increased total power over time while becoming more compact due to increasing system power density;

Whereas, every light-duty vehicle manufacturer has made commitments to electrify their product line in a significant way with confidential manufacturer projections received mid-2021;

Whereas, surveys show 74 percent of California drivers report having some interest in the electric vehicle market, with 40 percent considering going electric for their next vehicle;

Whereas, by the end of 2021, California had 60 ZEV and PHEV models in the market and had surpassed 1 million cumulative ZEVs and PHEVs sold, leading the United States (U.S.) in ZEV sales;

Whereas, the growth of the ZEV market and subsequent overcompliance with the ZEV regulation allows for compliance flexibility and resilience to unforeseen events. However, excess overcompliance brings uncertainty to future ZEV volumes and risks unnecessarily

prolonging the elimination of combustion engines and their associated emissions because a manufacturer could use the over-compliance credits in lieu of producing ZEVs in a future year;

Whereas, staff's ZEV regulation proposal includes an annual ZEV requirement that aligns with industry projections of sales in 2026, and that continues to ramp up quickly to nearly 70 percent of new vehicles sales by 2030, reaching 100 percent by the 2035 model year;

Whereas, to ensure success in achieving the proposed 100 percent sales mandate, staff is proposing to structure the ZEV regulation with the following elements:

- Minimum technical requirements for ZEVs and PHEVs that are to be counted as one vehicle value to be used toward manufacturer's annual ZEV requirement and changing the currency of the ZEV regulation from "credits" to "values" as to not cause confusion between the current and proposed ZEV regulation;

- Limiting the use of PHEVs to meet annual ZEV requirements to ensure ZEVs remain the main goal of the regulation;

- Continuing to allow for appropriate banking, trading, and fulfillment of deficits in a ZEV fleet performance standard, with a limit on credit life on excess vehicle values earned in the 2026 and subsequent model years;

- Allowing manufacturers to carry over pre-2026 model year ZEV regulation "credits," subject to limitations, to achieve 100 percent sales by the 2035 model year;

- Allowing manufacturers to use pooled ZEV and PHEV values, meaning excess values accrued in one state that has adopted California's ZEV regulation and used for compliance in another, up to an allowed cap through the 2030 model year, to help manufacturers manage year-to-year fluctuations in annual vehicle volumes;

- Counting a manufacturer's annual ZEV production first before considering converted historical, banked or pooled values;

- New minimum technical requirements for ZEVs and PHEVs to be counted toward a manufacturer's annual ZEV requirement beginning in the 2026 model year;

Whereas, to further ensure disproportionate pollution burdens are mitigated and promote equitable access to clean transportation for disadvantaged and low-income communities, in addition to the equity-promoting aspects of the proposed rule already discussed, staff proposes the following three optional environmental justice vehicle values intended to incentivize manufacturers under the ZEV regulation to increase affordable access and exposure to ZEV technologies for priority communities:

- Value for each new 2026 through 2031 model year ZEV or PHEV sold at a discount to qualifying community-based clean mobility programs such as the Sustainable Transportation Equity Project and the Clean Mobility Options Voucher Pilot Project;

- Value for ZEVs and PHEVs coming off-lease in California and delivered to a California dealership for purposes of participating in a low-income used ZEV financial assistance program (Clean Cars 4 All and the Financing Assistance for Lower-Income Consumers Project); and

Value for each new 2026 through 2028 model-year ZEV or PHEV delivered for sale with an MSRP less than or equal to \$20,275 for passenger cars and less than or equal to \$26,670 for light-duty trucks;

Whereas, in concert with staff's proposed ZEV stringency and to ensure broad and equitable access to reliable and durable new and used ZEVs, and to protect the air and climate benefits of the regulation, staff proposes a suite of measures, called ZEV Assurance Measures, designed to ensure ZEVs function as expected over their lifetimes as replacements to gasoline vehicles and that consumers are not deterred from purchasing them both new and used in order to ensure the emission benefits of the regulation are achieved;

The Standards Should Continue Reducing Vehicle Emissions Whereas, staff's remaining ICEVs will remain in use on California's roads well beyond 2035; and PHEVs that include combustion engines will continue to be sold and used after 2035;

Whereas, existing LEV III standards stipulate that each manufacturer's light-duty vehicle fleet must meet a fleet average standard for non-methane organic gas and oxides of nitrogen (NMOG+NO_x) that gradually reduces every model year until reaching 0.030 grams per mile by the 2025 model year, which includes the calculation of the fleet average with ZEVs. According to staff's analysis, allowing ZEVs to remain in the fleet average standard calculation could result in the increase of emissions from ICEVs;

Whereas, cold-start conditions will generate the highest emissions during a trip when all of the key emission control components are cold and the formation of engine-out pollutants, or by-products of combustion, are the highest. Even with advances in modern vehicle technology, cold-start ignitions continue to represent the bulk of emissions during a trip for ICEVs;

Whereas, testing found that a large portion of the vehicle fleet effectively had poor emission calibration of ICEV cold-start strategies and components outside the current test procedure requirements that results in higher real-world emissions;

Whereas, first studied during the MTR, and confirmed by continued testing during the development of the Advanced Clean Cars II proposal, current test cycles do not capture PHEV high-powered cold-starts emissions, allowing for poor emission control during real-world driving conditions;

Whereas, staff tested various PHEVs to compare cold-start emission results between the current test cycles and other test cycles that would result in a high-power cold start. Some of the worst-performing PHEVs required the use of the combustion engine on every high-power cycle, and the emissions were not well controlled. For instance, some of the heavier light-truck PHEVs had emissions that were almost 10 times higher on some of the high-power cycles compared to the Federal Test Procedure (FTP) certification test. These test results highlight the need to regulate PHEV high-power cold-start emissions to prevent the substantial emission impacts that were observed on some of the test vehicles;

Whereas, through the MTR, staff found current LEV III standards could allow for disproportionately higher PM emissions during more aggressive operation instead of protecting for robust PM emission control under the broadest set of in-use driving conditions. At the conclusion of the MTR, the Board directed its staff to develop a more stringent US06 cycle PM emission standard, which would verify PM is well controlled over

more aggressive in-use driving conditions, as well as consider PM emission standards for other test cycles and ambient conditions as necessary to minimize in-use PM emissions;

Whereas, the current running-loss evaporative emission standard of 0.05 grams per mile has not been changed since its introduction in the 1990s. Based on manufacturers' 20219 model year certification data, the vast majority of the vehicles (92 percent) were certified as emitting at or below 0.01 gram of hydrocarbons per mile;

Whereas, PHEVs require specialized evaporative emission canisters to accommodate long periods of driving without fuel combustion;

Whereas, medium-duty vehicles, due to the varied nature of how this vehicle class is assembled, are complicated to certify and perform in-use testing and in some cases have a duty cycle more similar to a heavy-duty vehicle than most passenger light-duty vehicles. Medium-duty vehicles are rated at a higher gross vehicle weight rating than light-duty vehicles and consist mainly of pickup trucks and larger cargo or passenger vans, with many having significant towing capability. Medium-duty vehicle pickup trucks are often rated for a very high gross combined weight rating, the maximum allowable combined weight of the full loaded vehicle and trailer, usually between 20,000 to 30,000 lbs. These factors make medium-duty vehicle emission control systems highly variable;

Whereas, the Board's on-road medium duty test data also show: (1) current chassis-certification test cycles such as the FTP and US06 will cover only a portion of the actual engine operation that typically occurs on-road; and (2) emissions that occur while a medium-duty vehicle is towing can be over four times higher on road than emissions measured in the lab during test cycles, which do not typically include conditions representative of loaded or towing medium-duty vehicles;

Whereas, amendments to CARB's Heavy-Duty Low-NO_x Omnibus regulations⁹ included adding an additional engine-certification test cycle for diesel engines to cover the low-load engine operation range, which covers a similar area of engine operation as the chassis-certification FTP test cycle. The amendments also established future engine FTP test cycle standards that are much more stringent requiring both gasoline and diesels to meet a 0.02 grams per brake horsepower-hour (g/bhp-hr) NO_x standard, which is a reduction of 80 to 90 percent from the current standards;

Whereas, even with more electrification of medium-duty vehicles due to requirements in the Advanced Clean Truck regulation, CARB's emission inventory of on-road sources developed to meet planning obligations under the Clean Air Act, shows that although medium-duty vehicles are only about 3 percent of the light-duty population, they will account for 10 to 13

⁹ See CARB, Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, Proposed Amendments to the Exhaust Emissions Standards and Test Procedures for 2024 and Subsequent Model Year Heavy-Duty Engines and Vehicles, Heavy-Duty On-Board Diagnostic System Requirements, Heavy-Duty In-Use Testing Program, Emissions Warranty Period and Useful Life Requirements, Emissions Warranty Information and Reporting Requirements, and Corrective Action Procedures, In-Use Emissions Data Reporting Requirements, and Phase 2 Heavy-Duty Greenhouse Gas Regulations, and Powertrain Test Procedures, Reso. 20-23, August 27, 2020.

percent of the NO_x emissions from 2026 to 2050 as each individual vehicle emits at a significantly higher level than light-duty vehicles;

Whereas, if the medium-duty fleet average standards remain unchanged, then there will be no further improvements to the ICEV medium-duty vehicle fleet from the vehicles being certified and built today even though further emission reductions are feasible;

Whereas, to address the above challenges to reducing vehicle emissions, staff proposes the following:

To prevent any potential emission backsliding from light-duty ICEVs due to expected increases in future ZEV sales, the proposed regulations remove ZEVs from the NMOG+NO_x fleet average while maintaining a fleet average of 0.030 grams per mile (30 milligram per mile) beyond 2025;

To ensure robust emission calibration during aggressive driving for all ICEVs, the proposed regulations eliminate the composite average option for certification and instead requires ICEVs to meet stand-alone US06 standards;

To ensure robust PM emission control for all vehicles during high speeds and accelerations, the proposed regulations reduce the US06 PM standard from 6 milligrams per mile to 3 milligrams per mile;

To control cold-start emissions from shorter idling and quick drive-away at the start of a trip, the proposed regulations require manufacturers to meet a new emission standard for a shorter idling FTP test and to meet a new emission standard for a quick drive-away FTP test;

To ensure robust high-powered cold-start emission control for blended PHEVs, the proposed regulations require PHEVs to meet a new emission standard for a cold-start US06 test;

To reduce evaporative emissions, the proposed regulations reduce the running-loss standard from 0.05 grams per mile to 0.01 grams per mile of hydrocarbons and require PHEVs to demonstrate the capability to purge their evaporative canister(s) either through a test sequence or an engineering evaluation;

To reduce cold start and urban driving emissions further for medium-duty vehicles, the proposed regulations progressively lower the NMOG+NO_x fleet average standards to a final target of 0.150 grams per mile and 0.175 grams per mile for class 2b and 3 vehicles, respectively, by the 2030 model year;

To prevent any potential emission backsliding from medium-duty ICEVs due to expected increases in future ZEV sales, the proposed regulations remove medium-duty ZEVs from the NMOG+NO_x fleet average for 2026 and subsequent model years for class 2b and 3 vehicles;

To ensure robust emission calibration during aggressive driving for all medium-duty ICEVs, the proposed regulations eliminate the composite average certification option and require all medium-duty vehicles to certify to a standalone supplemental federal test procedure (SFTP) standard that corresponds to the FTP standard to which the vehicle certifies;

To ensure all areas of engine operation are evaluated for medium-duty vehicles, the proposed regulations require 2027 and subsequent model year chassis-certified medium-duty vehicles with a gross combined weight rating (GCWR) over 14,000 pounds to meet a new in-use moving average window emission standard measured by a Portable Emissions Measurement System temporarily installed on the vehicle during on-road driving, which is effectively identical to requirements in the Heavy-Duty Low-NOx Omnibus rulemaking; and

To ensure the effectiveness of CARB's in-use compliance program, the proposed regulations require manufacturers to perform in-use self-testing for their medium-duty vehicles and report results for test groups selected by CARB;

To prevent any potential emission backsliding and provide manufacturers with greater compliance flexibility following the removal of ZEVs from the NMOG+NOx fleet averages, the proposed regulations eliminate the dirtiest emission bins for light-duty and medium-duty vehicles and add lower emission bins to expand manufacturers' options to certify vehicles at lower emission levels;

The Board Will Consider the Public's Comments

Whereas, staff proposed the Advanced Clean Cars II Regulations as set forth in Appendix A to the Initial State of Reasons (ISOR) released to the public on April 12, 2022;¹⁰

Whereas, staff intends to propose at a later date further proposed changes that are related to the proposed regulations and additional information the Board is relying on to adopt the proposed regulations, and make them available for public comment for at least fifteen days;

Whereas, CARB's regulatory program that involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans has been certified by the Secretary for Natural Resources under Public Resources Code section 21080.5 of the California Environmental Quality Act;¹¹

Whereas, CARB prepared a draft environmental analysis under its certified regulatory program for the proposed regulations, and circulated it as Appendix E to the ISOR for public comment 45 days from April 15, 2022, through May 31, 2022;

Whereas, the environmental analysis concluded that implementation of the proposed regulations has the potential to result in: beneficial impacts to air quality (long-term due to lower emissions from the operation of the vehicles) 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 (due to short-term, construction-related emissions), biological resources, cultural resources, geology and soils,

¹⁰ Proposed adoption of Cal. Code Regs., tit. 13, §§ 1961.4, 1962.4, 1962.5, 1926.6, 1962.7, and 1962.8; proposed amendments to Cal. Code Regs., tit. 13, §§ 1900, 1961.2, 1961.3, 1962.2, 1962.3, 1965, 1968.2, 1969, 1976, 1978, 2037, 2038, 2112, 2139, 2140, 2147, 2317, and 2903.

¹¹ CEQA, Pub. Res. Code, § 21000, et seq.; Cal. Code Regs., tit. 14, § 15251(d)); CARB conducts its CEQA review according to its certified program, Cal. Code Regs., tit. 17, §§ 60000-60007.

hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation, tribal cultural resources, and utilities and service systems;

Whereas, the environmental analysis expects that because the specific actions taken as a result of the proposed regulations that may cause potentially significant adverse impacts are likely to undergo project-level environmental review and compliance processes at the time they are proposed, it is expected that many individual development projects would be able to feasibly avoid or mitigate potentially significant impacts to a less-than-significant level; and

Whereas, the emission reductions from the proposed regulations are critical to achieving carbon neutrality by 2045, attaining the National Ambient Air Quality Standards in California, and reducing the burden of pollution throughout the state, by reducing emissions in California by 2040 by 30.1 tons per day of NO_x, 2.0 tons per day of PM_{2.5}, and 57.4 MMT/yr of greenhouse gases, which are estimated to 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.

The Direction of the Board

Now, therefore, be it resolved that the Board hereby directs the Executive Officer to take the following actions:

1. Evaluate all comments on the Advanced Clean Cars II regulations received during the public comment period, including at this hearing, and consider and develop any appropriate related modifications to the proposed regulations and make them available for public comment, with any additional supporting documents and information relied upon to adopt the regulations, for a period of at least 15 days in accordance with Government Code section 11346.8.
2. Evaluate all comments received during the public comment periods, including comments raising significant environmental issues, and prepare written responses to such comments as required by the Board's certified regulatory program for purposes of the California Environmental Quality Act, at California Code of Regulations, title 17, sections 60000-60007, and by Government Code section 11346.9(a);
3. If appropriate, prepare and circulate any further environmental analysis to the extent required by the Board's regulations at California Code of Regulations, title 17, sections 60000-60007, and as necessary, consider all feasible mitigation or alternatives that could eliminate or substantially lessen any significant adverse environmental impacts identified;
4. Present to the Board, at a subsequently scheduled public hearing, staff's written responses to any comments raising significant environmental issues, along with the final environmental analysis, for consideration for approval; and
5. Present to the Board, at a subsequently scheduled public hearing, the proposed regulations and additional proposed amendments for consideration for adoption.

Be it further resolved that the Board directs the Executive Officer, upon finalization and implementation of the Advanced Clean Cars II Regulations, to monitor and periodically report to the Board on the vehicle manufacturers' use of environmental justice values, as

finalized, and resulting impacts to the programs and communities that the environmental justice values are designed to benefit, with the expectation that CARB will revisit the environmental justice measures if they are not utilized or effectively providing the intended benefits.

Be it further resolved that the Board recognizes the ongoing need, in addition to the Advanced Clean Cars II Regulations, for statewide action to: target incentives and infrastructure development to disadvantaged and low-income communities, advance policies and tools that reduce the need for personal vehicles and bolster public transit and walkability, and encourage directed equity actions from private industry.

Be it further resolved that the Board directs the Executive Officer to and staff to continue conversations with vehicle manufacturers and equity and environmental justice advocates to collaborate on the development of strategies toward addressing these needs.