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CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES and ENVIRONMENTAL DEFENSE FUND SUBMISSION

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ARB Public Meeting to Consider the Advanced Clean Cars Midterm Review
Riverside, CA

March 24, 2017

The following submission provides information for the Board's consideration on California's historical leadership on climate and clean air policy, the unique challenges that California faces with regard to tailpipe air pollution, and the health and economic benefits of the state's Clean Cars program. In support of the ARB staff conclusion that the current MY 2022-2025 standards remain appropriate, information on the eminent technological feasibility of these standards is also provided below.

The Center for Energy Efficiency and Renewable Technologies (CEERT) and Environmental Defense Fund (EDF) thank you for the opportunity to provide information on California's Advanced Clean Cars program.

California has a time-tested history of leadership on air quality.

- The CAA waiver provision was sponsored by Sen. George Murphy (R-CA). In his statement on the floor, Sen. Murphy underscored: "It is because of the extraordinary and compelling problem that has existed and that exists in the State of California that the State has had to make a great effort in the past and will undoubtedly be called upon to make even greater efforts in the future, in order to assure that the citizens of the great State of California will have acceptable and clean air."
- The CAA allows other states to adopt standards that CA has promulgated under the waiver, reflecting Congressional intent "to foster California's role as a laboratory for motor vehicle emission control, in order to continue the national benefits that might flow from allowing California to continue to act as a pioneer in this field."[10]
    - Currently 12 such states (+ CA and DC), which together represent 35% of the passenger vehicle market. The states include CA, CT, DE, MA, MD, ME, NJ, NY, OR, PA, RI, VT, WA (and DC).
    - 10 ZEV-only states, including CA, cover 29% of the passenger vehicle market: CA, CT, MA, MD, ME, NJ, NY, OR, RI, VT.
- Since 1968, CA has requested and been granted waivers to promulgate tailored—and often more stringent—regulations more than 50 times.[11]
- California has continued to demonstrate bipartisan leadership in providing clean air protections for the state, which the National Academy of Sciences characterized as a "laboratory for emissions control innovations."[12]

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[10] California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 74 Fed. Reg. 32744, 32768 (July 8, 2009), citing 40 FR 23102, 23103 (waiver decision citing views of Congressman Moss and Senator Murphy) (May 28, 1975).

[11] GAO Report, Clean Air Act: Historical Information on EPA's Process for Reviewing California Waiver Requests and Making Waiver Determinations (Jan. 16, 2009), http://www.gao.gov/products/GAO-09-249R.

[12] National Academy of Sciences, "State and Federal Standards for Mobile-Source Emissions: Committee on State Practices in Setting Mobile Source Emissions Standards," National Research Council (2006), http://www.nap.edu/catalog/11586.html.

California faces heightened air pollution and public health challenges.

- California is home to six of the ten most polluted American cities for ozone and seven of ten for particle pollution.[13]
- Approximately one-third of California's 38 million residents still live in communities that exceed the federal ozone and PM2.5 standards.[14]
- ALA Most Polluted Cities:[15]

By Ozone	By Year Round Particle Pollution	By Short-Term Particle Pollution
#1: Los Angeles-Long Beach, CA	#1: Bakersfield, CA	#1: Bakersfield, CA
#2: Bakersfield, CA	#2: Visalia-Porterville-Hanford, CA	#2: Fresno-Madera, CA
#3: Visalia-Porterville-Hanford, CA	#3: Fresno-Madera, CA	#3: Visalia-Porterville-Hanford, CA
#4: Fresno-Madera, CA	#4: Los Angeles-Long Beach, CA	#4: Modesto-Merced, CA
#5: Phoenix-Mesa-Scottsdale, AZ	#5: El Centro, CA	#5: Fairbanks, AK
#6: Sacramento-Roseville, CA	#6: Modesto-Merced, CA	#6: Salt Lake City-Provo-Orem, UT
#7: Modesto-Merced, CA	#6: San Jose-San Francisco-Oakland,	#7: Logan, UT-ID
#8: Denver-Aurora, CO	CA	#8: San Jose-San Francisco-Oakland,
#9: Las Vegas-Henderson, NV-AZ	#8: Pittsburgh-New Castle-Weirton,	CA
#10: Fort Collins, CO	PA-OH-WV	#9: Los Angeles-Long Beach, CA
#11: Dallas-Fort Worth, TX-OK	#9: Harrisburg-York-Lebanon, PA	#10: Missoula, MT
#12: El Centro, CA	#10: Louisville-Jefferson County-	#11: Reno-Carson City-Fernley, NV

Vehicles are responsible for a significant contribution of health-harming air pollution.

- Passenger vehicles account for more than 20 percent of the United States' carbon pollution.[16]
- California has the largest passenger and commercial vehicle fleet in the nation – more than 13 percent of all highway vehicles are registered in California.[17]
- Vehicles emit many harmful pollutants including ozone-forming oxides of nitrogen and particulate matter. Ozone pollution poses multiple, serious threats to health including increased incidence of asthma attacks and cardiovascular disease, and premature death. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.
- Children face special risks from air pollution because their lungs are growing and because they are so active—yet recent studies show that thousands of schools around the country are located within 500 feet of highways or other roadways with substantial traffic. Lower income and minority groups are disproportionately affected by asthma and other harms due to their increased exposure to air pollution.[18]

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[13] American Lung Association, 2016 State of the Air Report, http://www.lung.org/our-initiatives/healthy-air/sota.
[14] http://senv.senate.ca.gov/sites/senv.senate.ca.gov/files/mdn_testimony.pdf
[15] American Lung Association, Most Polluted Cities, http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/most-polluted-cities.html.
[16] U.S. Energy Information Administration, Annual Energy Outlook, https://www.eia.gov/outlooks/aeo/tables_ref.cfm.
[17] Federal Highway Administration, Highway Statistics 2010, https://www.fhwa.dot.gov/policyinformation/statistics/2010/mv1.cfm.
[18] American Lung Association, Health Effects of Ozone and Particle Pollution, http://www.lung.org/our-initiatives/healthy-air/sota/health-risks/.

- In Los Angeles, for example, Interstate 405 is one of the nation's busiest highways. Many schools are located close to this major, heavily trafficked highway, placing countless schoolchildren at risk.
- Studies have found health effects such as cardiovascular disease from exposure to roads with at least 10,000 vehicles a day, a small fraction of the traffic on an L.A. freeway.[19]
- "Nearly 8,000 U.S. public schools lie within 500 feet of highways, truck routes and other roads with significant traffic … one in every 11 public schools, serving roughly 4.4 million students and spread across every state in the nation. Thousands more private schools and Head Start centers are in the same fix."[20]

California has an extraordinary stake in protecting human health and the environment from automobile pollution.

- Most of California's cropland is located in areas hardest hit by harmful ozone pollution.[21]
- California has the 3rd longest coastline in the U.S.
- Climate change is having a significant and measurable impact on California's environment and public health: a state report shows that climate change is occurring throughout California, from the Pacific Coast to the Central Valley to the Sierra Nevada Mountains. Impacts of a warmer climate include decreasing spring snowmelt runoff, rising sea levels along the California coast, shrinking glaciers, increasing wildfires, warming lakes and ocean waters, and the gradual migration of many plants and animals to higher elevations. The report also found evidence that impacts of climate change on human health and well-being are already occurring. Some of these impacts may disproportionately affect those who are socially or economically disadvantaged, and hence represent environmental justice concerns.[22]
- As early as 2002, the CA Legislature identified several specific "compelling and extraordinary impacts" of global warming in California: "(1) reductions in the state's water supply; (2) adverse impacts from increased air pollution caused by higher temperatures; (3) adverse impacts to food production caused by changes in water supply and a significant increase in pestilence outbreaks; (4) the doubling of catastrophic wildfires; (5) potential damage to the state's coastline and ocean ecosystems from increased storms and sea level rise; and (6) adverse economic impacts due to such things as the increased costs of food."[23]

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[19] The Center for Public Integrity, Questions and answers about schools and traffic pollution, https://www.publicintegrity.org/2017/02/17/20721/questions-and-answers-about-schools-and-traffic-pollution

[20] The Center for Public Integrity, The invisible hazard afflicting thousands of schools, https://www.publicintegrity.org/2017/02/17/20716/invisible-hazard-afflicting-thousands-schools.

[21] CA Office of Environmental Health Hazard Assessment, Indicators of Climate Change in California, https://oehha.ca.gov/climate-change/document/indicators-climate-change-california.

[22] CA Office of Environmental Health Hazard Assessment, Indicators of Climate Change in California, https://oehha.ca.gov/climate-change/document/indicators-climate-change-california.

[23] 2002 Cal. Stat. ch. 200. ("Vehicular Air Pollution Control" provisions, requiring CARB to adopt regulations to reduce GHG emissions from motor vehicles).

Pessimistic auto industry statements regarding environmental regulation have been proven false.

- Lee Iacocca, soon to be President of Ford Motor Company, said of the 1970 Clean Air Act: "[T]his bill could prevent continued production of automobiles . . .[and] is a threat to the entire American economy and to every person in America."[24]
- In Congressional testimony in 1973, GM Vice President Earnest Starkman said, "[I]f GM is forced to introduce catalytic converter systems across-the-board on 1975 models . . . [i]t is conceivable that complete stoppage of the entire production (system) could occur, with the obvious tremendous loss to the company, shareholders, employees, suppliers and communities."[25] Industry initially estimated catalytic converters would cost $860 per vehicle; a National Academy of Science report subsequently priced them at $288 per vehicle.[26]
- In 1994, automobile manufacturers estimated the cost of advanced low emission vehicles would be in excess of $1,500. One year later, Honda placed a Civic subcompact model on the market that emitted less than half of what was permitted under California law, at an added cost of only $100.[27]

The opportunity for technological transformation and progress is high.

- The clean car technologies and policies developed in California have been a model for other states, the nation and other countries.
- These technologies and policies have been developed and crafted through collaboration with federal and state agencies, automakers, consumers, other states and nations, health and environmental groups and many more.
- Auto manufacturers and suppliers are developing and deploying fuel efficient technologies at a much faster rate than was forecasted in the 2012 final rule. The auto industry as a whole has exceeded the fuel economy and GHG standards in each of the last four years (i.e., model years 2012-2015) while setting new sales records. These improvements have come while other metrics of vehicle performance have continued to improve, including acceleration times and durability.[28]
- New technologies are being utilized that allow a number of individual vehicle models to meet standards all the way out to 2025.[29] Today there are over 100 car, SUV, and pickup versions on the market that already meet 2020 or later standards.[30]

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[24] New Republic, Women's Suffrage and Other Visions of Right-Wing Apocalypse, https://newrepublic.com/article/72045/womens-suffrage-and-other-visions-right-wing-apocalypse.

[25] Ecology Law Quarterly, Federal Regulation of Motor Vehicle Emissions under the Clean Air Amendments of 1970 (Jan. 1975), http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1078&context=elq.

[26] The Pew Charitable Trusts, Industry Opposition to Government Regulation, http://www.pewtrusts.org/~/media/assets/2011/03/industry-clean-energy-factsheet.pdf.

[27] Sierra Research, Inc., The Cost Effectiveness of Further Regulating Mobile Source Emissions,. Feb. 28, 1994; The New York Times, Honda Meets a Strict Emission Rule, August 30, 1995.

[28] EPA, "Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation," (November 2016).

[29] EPA, "Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends Report 1975-2016," (2016), https://www.epa.gov/fueleconomy/trends-report.

[30] EPA website at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ghg#proposed=determination

- Since the Clean Cars program began in 2012, there has been roughly a doubling in the number of SUVs that achieve 25 miles per gallon or more; the number of cars that achieve 30 miles per gallon or more; the number of cars that achieve 40 miles per gallon or more.[31]
- Clean Cars standards are essential if the American auto sector is going to keep pace with global trends. Many other nations have adopted standards that will drive improved performance of passenger vehicles in a manner comparable to those standards established by the Clean Cars program here in the United States – and some nations are planning to go farther faster. This includes, but is not limited to, Canada,[32] the European Union,[33] China,[34] India[35] and South Korea.[36]

It is critical that California take action to protect its citizens.

- California's half century of clean air leadership has provided far reaching benefits across the state and the nation. It's critical that California continue this leadership.
- Further improving the efficiency of the passenger vehicle fleet is one of the most impactful steps that can be taken in the short term to curb climate pollution and reduce our nation's oil consumption, while driving innovative technologies that will stimulate economic growth and create high-quality domestic jobs.
- Indeed, clean air progress in California has occurred at the same time the state population has increased by over 25 percent and the economy has continued to grow. California is now the world's sixth largest economy and job growth in the state has outpaced the national rate. All while adopting the nation's most protective air quality policies.[37]
- In 2002, when enacting the state's "Vehicular Air Pollution Control" provisions, requiring CARB to adopt regulations to reduce GHG emissions from motor vehicles, the CA Legislature recognized California's opportunity and responsibility to address the motor vehicle sources that cause global warming. It noted that California has the world's fifth largest economy and that its motor vehicle emissions account for 40 percent of the state's greenhouse gases.[38]
- It also found that "California has a long history of being the first in the nation to take action to protect public health and the environment, and the federal government has permitted the state to take those actions," and that "[t]echnological solutions to reduce greenhouse gas emissions will stimulate the California economy and provide enhanced job opportunities."[39]

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[31] EPA, Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends Report Overview, https://www.epa.gov/fueleconomy/trends-report.
[32] TransportPolicy.net, Canada: Light-duty: Fuel Consumption and GHG, http://transportpolicy.net/index.php?title=Canada:_Light-duty:_Fuel_Consumption_and_GHG.
[33] TransportPolicy.net, EU: Light-duty: GHG, http://www.transportpolicy.net/index.php?title=EU:_Light-duty:_GHG.
[34] TransportPolicy.net, China: Light-duty: Fuel Consumption, http://www.transportpolicy.net/index.php?title=China:_Light-duty:_Fuel_Consumption.
[35] TransportPolicy.net, India: Light-duty: Fuel Consumption, http://transportpolicy.net/index.php?title=India:_Light-duty:_Fuel_Consumption.
[36] TransportPolicy.net, South Korea: Light-duty: Fuel Economy and GHG, http://transportpolicy.net/index.php?title=South_Korea:_Light-duty:_Fuel_Economy_and_GHG.
[37] http://senv.senate.ca.gov/sites/senv.senate.ca.gov/files/arb_-_kurt_kaperos_testimony_2-22-17.pdf
[38] Id. § 1(b), (e).
39 Id. § 1(f), (g).