

18-1-4
Alice
Henderson



February 8, 2018

Clerk of the Board
California Air Resources Board
1001 I Street, Sacramento, California 95814

RE: Comments of Environmental Defense Fund, Center for Energy Efficiency and Renewable Technologies, Natural Resources Defense Council, and Union of Concerned Scientists on the California Air Resources Board's Proposed Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation

Environmental Defense Fund (EDF), Center for Energy Efficiency and Renewable Technologies, Natural Resources Defense Council, and Union of Concerned Scientists appreciate the opportunity to comment on the California Air Resources Board (ARB) proposal to adopt California Phase 2 greenhouse gas (GHG) emission standards, and proposed amendments to the state Tractor-Trailer GHG regulation to harmonize that regulation with the proposed Phase 2 trailer standards. We strongly support ARB's proposal to adopt these important environmental and public health safeguards. A robust final Phase 2 program that puts heavy-duty trucks and buses on the trajectory toward net emissions and fuel consumption reductions is imperative for safeguarding public health against dangerous air pollution and climate change. We support strong standards that will improve our climate security, deliver cleaner air to communities, provide fuel cost savings to fleets and truckers, and save consumers money.

EDF is a non-partisan, non-governmental environmental organization representing over two million members and supporters nationwide. Since 1967, EDF has linked science, law, policy, and economics to create innovative, equitable, and cost-effective solutions to the most pressing environmental problems. EDF pursues initiatives at the state and national levels designed to

protect human health and the environment. Among these initiatives, EDF has worked to reduce climate-destabilizing and health-harming emissions from the transportation sector.

The Center for Energy Efficiency and Renewable Technologies (CEERT) is a partnership of major environmental groups and clean-energy companies. Since our founding in 1990, we have designed and fought for policies that advance clean, renewable energy and climate solutions for California and the West.

The Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 3 million members and online activists, 400,000 of whom reside in California. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment.

The Union of Concerned Scientists is a national organization, backed by more than half a million members, that puts science into action to build a healthier planet and a safer world. UCS conducts rigorous technical analysis and uses it to advocate for change: informing decision makers, shaping public opinion, and creating policies to help solve some of today's most pressing problems, including pollution from the transportation sector.

These comments will specifically address the following:

1. These standards are necessary in light of significant and growing transportation sector emissions and associated harms in California;
2. California's leadership and legal authority to adopt protective vehicle emission standards has reaped great benefits for the state and for the nation as a whole;
3. ARB has properly excluded a "deemed to comply" provision from regulations adopting the federal Heavy-Duty Phase 2 Standards;
4. We support ARB's proposed adoption of the federal emission requirements for glider vehicles, glider engines, and glider kits;
5. We support ARB's proposed adoption of the federal trailer standards and proposed amendments to the California Tractor-Trailer GHG regulation; and
6. We support ARB's proposed adoption of the Advanced Technology Credit scheme and requirements that PHEVs show no increase in NOx emissions and meet an increasing minimum all-electric range to receive a multiplier.

- 1. These standards are necessary to address growing transportation sector emissions and associated harms in California.**

Motor vehicle emissions contribute significantly to local air pollution and climate change. In fact, the transportation sector recently surpassed the power sector as the leading source of CO₂

emissions in the U.S.¹ According to the Energy Information Administration, the U.S. transportation sector emitted 1.86 billion metric tons of carbon dioxide in 2015.² Motor vehicles also emit many other health-harming pollutants, such as particulate matter (PM), volatile organic compounds (VOCs), and oxides of nitrogen (NO_x), which contribute significantly to the formation of ground-level ozone or “smog.”³ These emissions have been significantly reduced in California by the state’s development and adoption of protective, cost-effective motor vehicle emission standards. However, the transportation sector was still the largest source of GHGs in California, responsible for 39% of the state’s GHG emissions and substantial amounts of regional pollution in 2015.⁴

California has unique air quality concerns and has already experienced climate change impacts. California is home to six of the ten most polluted American cities for ozone and eight of ten for particle pollution.⁵ Approximately one-third of California’s 38 million residents still live in communities that exceed the federal ozone and PM_{2.5} standards.⁶

Climate change, too, is having a significant and measurable impact on California’s environment and public health: a 2013 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 thus represent environmental justice concerns.⁷ As early as 2002, the California 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

¹ Energy Information Administration, Today In Energy, *U.S. energy-related CO2 emissions fell 1.7% in 2016* (April 10, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=30712>.

² Energy Information Administration, *U.S. Energy-Related Carbon Dioxide Emissions, 2015*, Figure 3 (Mar. 2017), available at <https://www.eia.gov/environment/emissions/carbon/>.

³ Health Effects Institute Special Report 17, *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects*, at vii (Jan. 2010), available at <https://www.healtheffects.org/system/files/SR17Traffic%20Review.pdf>.

⁴ California Air Resources Board, *California Greenhouse Gas Emission Inventory – 2017 Edition*, <https://www.arb.ca.gov/cc/inventory/data/data.htm>.

⁵ Am. Lung Ass’n, *State of the Air 2017*, 6, 17 (2017) (“2017 State of the Air”), available at <http://www.lung.org/assets/documents/healthy-air/state-of-the-air/state-of-the-air-2017.pdf>.

⁶ http://senv.senate.ca.gov/sites/senv.senate.ca.gov/files/mdn_testimony.pdf

⁷ CA Office of Environmental Health Hazard Assessment, *Indicators of Climate Change in California*, <https://oehha.ca.gov/climate-change/document/indicators-climate-change-california>.

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.⁸

Adoption of the Heavy-Duty Phase 2 Standards will be pivotal in reducing these emissions and mitigating these negative impacts.

2. California's leadership and legal authority to adopt protective vehicle emission standards has reaped great benefits for the state and for the nation as a whole.

Section 209(a) of the Clean Air Act (CAA) generally preempts states from adopting standards relating to the control of emissions from new motor vehicles and engines.⁹ Because of California's longstanding and severe air pollution problems, as well as the state's pioneering efforts in developing effective emission controls for motor vehicles and engines, section 209(b) of the CAA grants California a waiver of federal preemption when certain conditions are met.¹⁰ The CAA waiver provision was sponsored by Senator George Murphy (R-CA). In his statement on the floor, Senator 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.¹¹

Other states may adopt California's motor vehicle emission standards under section 177 of the CAA, and EPA must approve State Implementation Plan (SIP) revisions reflecting such adoption as long as the proposed standards are identical to the California standards for which a waiver has been granted and are adopted at least two years before the model year to which they apply.¹² The CAA's provision allowing other states to adopt California standards reflects 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

⁸ 2002 Cal. Stat. ch. 200. ("Vehicular Air Pollution Control" provisions, requiring CARB to adopt regulations to reduce GHG emissions from motor vehicles).

⁹ 42 U.S.C. § 7543(a).

¹⁰ *Engine Mfr's Ass'n v. EPA*, 88 F. 3d 1075, 1090 (D.C. Cir. 1996).

¹¹ 113 CONG. REC. 19,182 (1967) (statement of Sen. Murphy).

¹² 42 U.S.C. § 7507; *see also* 82 Fed. Reg. at 28,612-13.

pioneer in this field.”¹³ Since 1968, CA has requested and been granted waivers to promulgate tailored—and often more stringent—regulations more than 50 times.¹⁴

California has continued to demonstrate bipartisan leadership in providing clean air protections for the state. In 2002, when enacting the state’s “Vehicular Air Pollution Control” provisions requiring ARB to adopt regulations to reduce GHG emissions from motor vehicles, the California Legislature recognized California’s opportunity and responsibility to address the motor vehicle sources that cause global warming. The Legislature 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.”¹⁵

California’s half century of clean air leadership has provided far-reaching benefits across the state and the nation. It is critical that California continue this leadership. Further improving the efficiency of the heavy-duty fleet is one of the most impactful steps that can be taken in the short term to curb climate pollution and reduce 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.¹⁶

3. ARB has properly excluded a “deemed to comply” provision from regulations adopting the federal Heavy-Duty Phase 2 Standards.

We support ARB’s proposal to independently verify certification information submitted by manufacturers, opting *not* to include “deemed to comply” provisions (under which federally certified engines and vehicles would be “deemed to comply” with the California regulations) in adopting the federal Phase 2 standards. We agree that California’s active role in certifying engines, vehicles, and trailers is critical to ensure the benefits of the California Phase 2 GHG

¹³ 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).

¹⁴ 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>.

¹⁵ Id. § 1(f), (g).

¹⁶ Senate Committee on Environmental Quality, Remarks of Kurt Karperos (February 22, 2017), http://senv.senate.ca.gov/sites/senv.senate.ca.gov/files/arb_-_kurt_karperos_testimony_2-22-17.pdf.

program. Moreover, California is uniquely qualified to conduct independent reviews and approvals of certification applications.

Omitting “deemed to comply” provisions from the Phase 2 Standards will preserve ARB’s ability to implement the standards, which is crucial given circumstances surrounding EPA’s ability and willingness to do so at the federal level. In November 2017, EPA issued a Proposed Rule to repeal the provisions of the federal Phase 2 Standards applicable to glider vehicles, glider engines, and glider kits, and is expected to finalize the repeal,¹⁷ despite widespread industry and public support for the standards.¹⁸ Similarly, EPA’s likely continued implementation of the standards for trailers is in question as EPA has granted a petition for reconsideration of the trailer standards filed by the Truck Trailer Manufacturers Association (TTMA),¹⁹ and did not oppose TTMA’s request to the U.S. Court of Appeals for the D.C. Circuit to stay the standards, which the court has granted pending litigation.²⁰

There is also a significant possibility that, as proposed by President Trump, Congress will substantially cut the budget for EPA, limiting the agency’s resources to effectively implement the standards.²¹ EPA’s National Vehicle and Fuel Emissions Laboratory in Ann Arbor, Michigan, which conducts certification for vehicle emissions and fuel economy standards, has been the subject of proposed budget cuts.²² As the transportation sector is the largest source of GHG and NOx emissions in California, it is imperative that ARB maintain independent certification authority to protect its citizens from these harmful pollutants, and to ensure a level playing field for regulated manufacturers.

Moreover, as a national leader in vehicle emission standards, ARB is uniquely qualified to manage independent certification of the Heavy-Duty Phase 2 Standards, having conducted reviews of applications for engine and vehicle certification under numerous other state emission standards. ARB has been certifying and continues to certify all heavy-duty engines, light duty vehicles, and all other regulated mobile sources for criteria pollutants. Materials describing ARB’s planned process for certification indicate ARB has developed a streamlined electronic

¹⁷ U.S. EPA, Proposed Rule, *Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits*, 82 Fed. Reg. 53,442 (Nov. 16, 2017).

¹⁸ See, e.g., Erin Murphy, *Freight truck fleets, manufacturers, and dealers to Pruitt: stop supporting super-polluting glider trucks*, EDF (Jan. 24, 2018), <http://blogs.edf.org/climate/411/2018/01/24/freight-truck-fleets-manufacturers-and-dealers-to-pruitt-stop-supporting-super-polluting-glider-trucks/>.

¹⁹ Letter from EPA Administrator E. Scott Pruitt to the Truck Trailer Manufacturers Association (August 17, 2017), available at <https://www.epa.gov/sites/production/files/2017-08/documents/hd-ghg-phase2-ttma-ltr-2017-08-17.pdf>.

²⁰ Respondents’ Response to Stay Motion at 3, (No. 16-1430), available at https://www.edf.org/sites/default/files/content/10.12.17_epa_response_to_stay_motion.pdf.

²¹ See, e.g., Timothy Cama, *EPA watchdog: Trump budget cuts would be a ‘significant challenge,’* The Hill (Jan. 29, 2018), available at <http://thehill.com/policy/energy-environment/371241-epa-watchdog-trump-budget-cuts-would-be-a-significant-challenge>.

²² See, e.g., Todd Spangler, *Ann Arbor fuel lab faces cut in Trump budget*, Detroit Free Press (May 23, 2017), available at <https://www.freep.com/story/news/2017/05/23/ann-arbor-fuel-lab-faces-cut-trump-budget/340466001/>.

certification system for Heavy-Duty Phase 2.²³ And ARB closely coordinates its certification and compliance efforts with EPA.

4. We support ARB's proposed adoption of the federal emission requirements for glider vehicles, glider engines, and glider kits.

We support ARB's proposal to adopt the federal emission requirements for glider vehicles and glider kits that EPA promulgated as part of the Heavy-Duty Phase 2 Greenhouse Gas Emissions Standards in 2016.²⁴ Glider vehicles are more polluting than modern freight trucks because they are manufactured with older engines lacking modern emission controls—thus, glider vehicles emit incredible volumes of air pollutants that are detrimental to human health, including NO_x and PM, as well as diesel exhaust and GHGs.

As ARB has explained in its proposal, glider vehicles are significantly more polluting than standard heavy-duty trucks, because they contain old, remanufactured engines that lack modern pollution control technology, which are installed into new truck bodies.²⁵ Glider vehicle sales increased dramatically after EPA's criteria pollutant rule for heavy-duty vehicles went into effect from 2007-2010, requiring that freight trucks be equipped with exhaust aftertreatment devices and other control technologies.²⁶ These trucks have negative effects on human health, particularly for communities located near major highways and other freight transportation corridors. NO_x and PM emissions cause a number of respiratory health issues, including exacerbated asthma attacks, decreased lung function, and increased emergency room visits for respiratory causes. ARB has long been aware of the harmful impacts of diesel freight truck emissions, which it discussed extensively during the development of the 2008 Truck and Bus Rule, which implemented in-use regulations for heavy-duty vehicles.²⁷

Allowing these super-polluting trucks to operate unhindered in California would go against ARB's history of innovative safeguards to improve public health through cleaner air, particularly with regard to heavy-duty vehicles. ARB pioneered clean trucks efforts by making elements of

²³ Proposed California Phase 2 Greenhouse Gas Standards (CA Phase 2 GHG) and Potential Amendments to the Tractor-Trailer GHG Regulations, Second Public Workshop, August 31, 2017, powerpoint presentation slides 85-100.

²⁴ U.S. Environmental Protection Agency, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, Final Rule, 81 Fed. Reg. 73,478 (Oct. 25, 2016).

²⁵ ARB Staff Report, Proposed California Greenhouse Gas Emissions Standards for Medium- And Heavy-Duty Engines and Vehicles and Proposed Amendments to the Tractor-Trailer GHG Regulation, at II-2 (Dec. 19, 2017) [hereinafter "Staff Report"].

²⁶ See EPA, Final Rule: Emissions Control, Air Pollution From 2004 and Later Model Year Heavy-Duty Highway Engines and Vehicles, 65 Fed. Reg. 59,895 (Oct. 6, 2000); EPA, Final Rule: Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, 66 Fed. Reg. 5,001 (Jan. 18, 2001).

²⁷ ARB Staff Report, Proposed Regulation for In-Use On-Road Diesel Vehicles at 7 (Oct. 2008), available at <https://web.archive.org/web/20110225153126/http://www.arb.ca.gov/regact/2008/truckbus08/tbisor.pdf>.

the EPA SmartWay program—a voluntary federal effort to improve freight truck efficiency—mandatory in California through the Tractor-Trailer GHG Regulation, which was adopted in 2008.²⁸ After EPA and NHTSA adopted Phase 1 of the heavy-duty GHG emission standards in 2011,²⁹ ARB adopted California’s Phase 1 standards in 2013.³⁰ It is crucial that California continues this strong record of leadership by adopting the Phase 2 glider provisions as promulgated in October 2016.

ARB, as a state regulatory body, has independent authority to regulate glider vehicles in use.³¹ As ARB recognizes, EPA has issued a proposal to repeal the gliders provision of the 2016 Heavy-Duty Phase 2 Standards, which would effectively reopen the loophole to allow unlimited production of glider vehicles without modern pollution controls.³² Regardless of whether EPA promulgates a final rule to repeal the federal glider vehicles provisions, ARB can and should exercise its state authority to regulate glider vehicle emissions in California.

Through in-use regulation via the Truck and Bus Rule, ARB technically prevents super-polluting glider vehicles from operating in California by restricting the use of high-emission freight trucks with pre-2010 engines.³³ However, ARB has acknowledged that enforcement of this rule is increasingly challenging, both as the numbers of glider vehicles on the road has increased, and as super-polluting trucks become harder for law enforcement officials to identify for inspection purposes. Because the most common glider vehicles are manufactured by installing old, remanufactured engines in new truck bodies, these vehicles do not necessarily look different than a modern, compliant freight truck looks on the road. We encourage ARB to implement an effective program to prevent high-emitting glider vehicles that are not in compliance with the Truck and Bus Rule from operating in California. Even with the adoption of the glider vehicles provision that ARB proposes here, the nationwide prevalence of these vehicles means that enforcement of the Truck and Bus Rule will become more important as glider vehicles from other states enter California. Additionally, we encourage ARB to implement the proposed vehicle labeling and VIN engine reporting requirements to facilitate the enforcement of emission standards as to glider vehicles.³⁴

²⁸ See Staff Report at I-5 – I-6.

²⁹ Final Rule, Greenhouse Gas Emission Standards and Fuel Efficiency for Medium- and Heavy-Duty Engines and Vehicles, 76 Fed. Reg. 57,106 (Sept. 15, 2011).

³⁰ See Staff Report at I-4.

³¹ See HSC sections 39600, 39601, 39650-75, 43013, 43018(a), 43600, and 43701(b).

³² U.S. EPA, Proposed Rule, *Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits*, 82 Fed. Reg. 53,442 (Nov. 16, 2017).

³³ Staff Report ES-10.

³⁴ See Staff Report at II-5, III-15.

5. We support ARB's proposed adoption of the federal trailer standards and amendments to the California Tractor-Trailer GHG regulation.

We support ARB's proposed adoption of the federal trailer standards, as promulgated in the October 2016 Heavy-Duty Phase 2 Rule. Trailers are the primary vehicles for moving freight in the United States.³⁵ In 2012, there were over 11.7 million commercial trailers registered in the U.S.,³⁶ and in 2017, the amount of goods hauled by truck were projected to grow more than 3% annually over the next five years.³⁷ Tractor-trailers account for 60 percent of medium- and heavy-duty greenhouse gas emissions, and trailers affect the fuel efficiency of tractor-trailer trucks through aerodynamic drag, tire rolling resistance, and additional weight.³⁸ Low-cost measures applicable to trailers can provide up to one-third of the overall GHG emissions reductions from tractor-trailers, garnering much-needed reductions in fuel consumption and emissions in the fleet.³⁹

The trailer standards in the Heavy-Duty Phase 2 Rule represent the consummation of an extensive analytical process: EPA decided to delay adoption until Phase 2 of its heavy-duty greenhouse gas emissions standards to allow more time to collect information and develop a test protocol.⁴⁰ The agency carefully designed the final standards—in consultation with states, NHTSA, and industry stakeholders—to apply to trailers *only* where they will result in greenhouse gas reductions.⁴¹

ARB has already implemented the Tractor-Trailer GHG regulation and the California Phase 1 regulation applicable to trailers, but further reductions are needed to achieve California's statutorily mandated goals.⁴² The federal trailer standards are more protective than existing programs in California, and will ensure a continued decline in greenhouse gas emissions from heavy-duty trucks. Although the trailers provisions of the Heavy-Duty Phase 2 Rule are currently stayed in litigation and under reconsideration by EPA and NHTSA,⁴³ those proceedings

³⁵ 76 Fed. Reg. 57,106, 57,362 (Sept. 15, 2011).

³⁶ US Department of Transportation (USDOT), Federal Highway Administration, *Highway Statistics Series: Trailer and semi-trailer registrations – 2012*, (Jan. 2014), available at <https://www.fhwa.dot.gov/policyinformation/statistics/2012/pdf/mv11.pdf>.

³⁷ Clarissa Hawes, *New ATA Report Forecasts Steady Growth for Trucking Industry*, Trucks.Com (July 19, 2017), <https://www.trucks.com/2017/07/19/trucking-industry-steady-growth>.

³⁸ HDP2 Rule, 81 Fed. Reg. 73,478, 73,480 (Oct. 25, 2016).

³⁹ 81 Fed. Reg. at 73,504, 73,516, n.89.

⁴⁰ 76 Fed. Reg. 57,106, 57,362 (Sept. 15, 2011).

⁴¹ See Staff Report at II-4.

⁴² Staff Report at II-4.

⁴³ Letter, Scott Pruitt, EPA Administrator, to the Truck Trailer Manufacturers Association (Aug. 17, 2017) (stating EPA's decision to revisit the Phase 2 trailer provisions), <https://www.edf.org/sites/default/files/content/hd-ghg-phase2-ttma-ltr-2017-08-17.pdf>; Letter, Jack Danielson, Acting NHTSA Deputy Administrator, to the Truck Trailer Manufacturers Association (Aug. 17, 2017) (stating NHTSA's decision to grant the reconsideration request as a petition for rulemaking), <https://www.edf.org/sites/default/files/content/2017-08-17%20NHTSA%20Letter%20to%20TTMA.pdf>; Order, *TTMA v. EPA*, Case No. 16-1430 (D.C. Cir. Oct. 27, 2017)

do not affect California's authority to establish GHG emission standards for trailers. ARB has the authority to adopt the federal trailer standards, and we support its decision to do so here.⁴⁴

If EPA moves forward with its reconsideration and ultimately repeals the trailer standards, we support ARB's plans to make up the foregone emissions reductions from trailers by increased on-road enforcement and by promulgating future amendments to the Tractor-Trailer GHG regulation.⁴⁵

6. We support ARB's proposed adoption of the Advanced Technology Credit scheme and requirements that PHEVs show no increase in NOx emissions and meet an increasing minimum all-electric range to receive a multiplier.

We support ARB's proposal to adopt EPA's generous advanced technology credit (ATC) scheme for PHEVs, all-electric vehicles, and fuel cell vehicles. Granting significant credits will help incentivize manufacturers to incorporate these technologies into their fleets and achieve more rapid commercialization of these types of vehicles within the heavy-duty sector. We also support ARB's proposal to require that PHEVs show no increase in NOx emissions and meet a minimum all-electric range to receive an ATC multiplier.

Ozone pollution continues to threaten the health of millions of Californians – more than one-third of California residents live in areas with unhealthful levels of ozone.⁴⁶ Reducing emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) –precursors to ozone – is critical to providing cleaner air for communities and families in California and across the nation. And it is clear that additional reductions in ozone-forming NOx are needed from the heavy-duty sector in particular. In places like California – where so much of the state is hard hit by ozone pollution – heavy-duty trucks still make up 33% of statewide NOx emissions.⁴⁷ California has already begun research on the technologies needed to reduce NOx emissions by another 90 percent.⁴⁸ By ensuring that PHEVs with increased NOx emissions are not incentivized, ARB will aid manufacturers in integrating low- and zero-CO₂ technologies without trading one benefit for the other.

(granting TTMA's motion for a stay), <https://www.edf.org/sites/default/files/content/2017-10-27%20Court%20Grants%20Stay.pdf>.

⁴⁴ See Staff Report at III-9.

⁴⁵ Proposed California Phase 2 Greenhouse Gas Standards (CA Phase 2 GHG) and Potential Amendments to the Tractor-Trailer GHG Regulations, Second Public Workshop, August 31, 2017, available at https://www.arb.ca.gov/msprog/onroad/caphase2ghg/20170831_workshop_presentation.pdf.

⁴⁶ 2017 State of the Air Report at 17.

⁴⁷ CARB presentation at Board Hearing, "Update on the Proposed Federal Phase 2 GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles," Sacramento, (July 23, 2015), available at <http://www.arb.ca.gov/board/books/2015/072315/15-6-6pres.pdf>.

⁴⁸ Southwest Research Institute, "ARB Low NOx Program Advisory Group Update", (August 2015), available at <http://www.arb.ca.gov/research/veh-emissions/low-nox/low-nox.htm>.

Likewise, ARB has prudently proposed a minimum all-electric range for PHEVs to receive an ATC multiplier. As has been shown with passenger vehicles, there are many types of PHEVs, and some operate with zero emissions only a small fraction of time.⁴⁹ The ARB light-duty vehicle regulations provide additional credits for PHEVs capable of more zero emission operation.⁵⁰ The proposed heavy-duty standards should do the same for trucks, incentivizing manufacturers to bring truly advanced hybrids to market that achieve a greater amount of electric operation.

The ARB proposal on this matter is thoughtful and balanced, and will help achieve ARB's air quality goals with regard to both GHGs and ozone.

7. Conclusion

A strong Phase 2 program that puts heavy-duty trucks and buses on the trajectory toward net emissions and fuel consumption reductions is vital for safeguarding public health against dangerous air pollution and climate change. We support robust standards that will improve our climate security, deliver cleaner air to communities, provide fuel cost savings to fleets and truckers, and save consumers money. For the foregoing reasons, we respectfully urge the Board to adopt these standards, which will deliver these benefits.

Thank you for the opportunity to submit these comments.

Respectfully submitted,

Alice Henderson
Erin Murphy
Environmental Defense Fund

V. John White
**Center for Energy Efficiency and Renewable
Technologies**

⁴⁹ CARB, California's Advanced Clean Cars Midterm Review, Appendix G (Jan. 18, 2017), https://www.arb.ca.gov/msprog/acc/mtr/appendix_g.pdf.

⁵⁰ CARB, Staff Report: Initial Statement of Reasons, Advanced Clean Cars (Dec. 7, 2011) at 37, Fig. 8, *available at* <https://www.arb.ca.gov/regact/2012/zev2012/zevisor.pdf>.

Irene Gutierrez
Natural Resources Defense Council

Don Anair
Union of Concerned Scientists