



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

January 24, 2012

Chairman Mary Nichols and Board Members
California Air Resources Board
Headquarters Building
1001 I Street
Sacramento, CA 95814

Re: Support For The LEV III Amendments To The California Greenhouse Gas And Criteria Pollutant Exhaust And Evaporative Emission Standards

Dear Chairman Nichols and Members of the Board,

The Union of Concerned Scientists strongly supports the proposed standards to reduce smog-forming, particulate and global warming emissions from new vehicles sold between 2017 and 2025. These standards are critical to further advancing California's long and successful mission of protecting public health from poor air quality and more recently the impacts of climate change. California has long lead the nation and the world in reducing air pollution from our cars and trucks. This proposal represents a historic moment, as California's clean vehicles leadership has in part led to a national agreement to reduce global warming emissions of passenger vehicles through 2025. We strongly support these efforts and the proposed standards. We urge the board to consider our comments and recommendations to ensure the standards will deliver the air quality and global warming emissions benefits expected from the proposed regulations.

Benefits of the Proposed Standards

By 2025, the proposed standards are expected to reduce smog-forming emissions by 75% from new vehicles compared to vehicles sold in 2008. These reductions in tailpipe emissions will deliver significant air quality and public health benefits to California in the coming years. A statewide reduction of 1,400 tons of particulate matter and 40,000 tons of nitrogen oxides through 2025 is expected to prevent an estimated 430 premature deaths. Californians will not only benefit from the reduction in adverse health effects as a result of breathing cleaner air, but also the reduced health costs associated with asthma, heart and lung disease, and other illnesses exacerbated by poor air quality.

The proposed standards will also result in a nearly 50 percent reduction in global warming emissions in new vehicles by 2025 as compared to today's vehicles. California faces significant impacts from a warming climate, with our state's water supply and our agriculture economy at particular risk. Under increased global warming, snow pack in the Sierra Nevada, a key source of the state's water supply, is projected to shrink while higher temperatures and more extreme heat waves will stress agriculture

crops and exacerbate our air quality problems.¹ California's leadership on reducing global warming emissions from our cars and trucks is critical to global efforts to tackle climate change. California's leadership has already led to similar national standards and technology solutions to meet California standards, and can help accelerate global efforts for cleaner cars and trucks.

The benefits of these standards go far beyond the tailpipe, providing savings to consumers at the pump and creating jobs in California. The combination of the LEVIII standards and the zero emission vehicle program are expected on average to save consumers \$4,000 over the life of a vehicle meeting the proposed 2025 standards, even after paying for the cost of the clean car technology.² The initial cost of the technology can be recovered in less than three years of fuel savings and savings can begin in the first month of ownership if the vehicle is financed. By 2030, the net savings from these standards is expected to top \$6 billion annually.

These standards are also expected to increase the number of jobs by 37,000 in California by 2030 as a result of re-spending of fuel savings and investments in clean vehicle technologies. Spending less on fuel means Californians will have more income to spend on other goods and services, putting money back into California's economy in more job intensive sectors than the oil and gas industry. California's leadership on clean cars has also made it a magnet for clean vehicle venture capital investments, with nearly 70% of global clean vehicle venture capital coming to California.³ Maintaining California's leadership and commitment to low-emission vehicles can help to ensure these investments continue to come to California.

The benefits to air quality, global warming emission reductions, and the consumer and economic benefits associated with the proposed standards are substantial. However, there are some provisions within the proposed global warming emission standards that could result in the failure to fully realize these benefits. In addition, the particulate matter standard, with final implementation in 2028, could be implemented sooner so Californians do not have to wait a full 16 years for these public health protections to take effect.

Summary of Recommendations

Below is a summary of key recommendations followed by more detailed comments. These recommendations are aimed at ensuring the anticipated global warming pollution benefits of the proposed standards are achieved and that particulate matter controls on cars and trucks are implemented in a timely manner.

1. The California Air Resources Board (CARB) and the federal agencies (U.S. EPA and National Highway Traffic Safety Administration (NHTSA)) should adopt a backstop mechanism to prevent the loss of benefits resulting from a significant shift towards larger vehicles and a reclassification

¹ Amy Lind Luers, et.al., "Our Changing Climate: Assessing the Risks to California", 2006.

² As compared to a vehicle meeting model year 2016 standards. Even greater savings compared to vehicles on the road today.

³ From the recent analysis published by Next10 titled, "Powering Innovation: California is Leading the Shift to Electric Vehicles from R&D to Early Adoption," December 2011

of cars as trucks. As proposed in the staff report, CARB should continue to monitor the implementation of the standards and provide status updates to the board on an annual basis.

2. We support CARB's inclusion of upstream emissions accounting for electricity and hydrogen and urge CARB to continue to work with federal regulators as national standards are finalized to include federal accounting of upstream emissions.
3. CARB should engage with the federal agencies as part of the federally proposed mid-term review. However, California must continue to retain its right to exercise its authority under the Clean Air Act to adopt more stringent standards than the federal government to protect the health of all Californians from poor air quality and climate change.
4. The 1 mg standard for particulate matter should phase-in sooner than proposed, with full implementation by 2025 in order to provide the health protections from such standards as soon as possible.

LEVIII - Greenhouse Gas Emission Standards

We support the global warming pollution target agreed to by California and the Obama administration if it is finalized and implemented with integrity. The program could lead to a 166 grams-per-mile (g/mile) California average by 2025, equivalent to a 34 percent reduction from model year 2016 levels.⁴ The proposed standards represent significant progress equivalent to an average 4.5% reduction in global warming pollution per year between 2017 and 2025. While UCS supports the staff's proposal, we believe that the technology exists to establish even more stringent standards. The joint agency Technical Assessment Report⁵ demonstrated the technical feasibility of a 6% per year reduction in global warming emissions, which would maximize the net societal benefits of the standards.

The proposed federal and California standards will deliver significant reductions in global warming pollution. However, some of the proposed flexibility provisions and a mid-term review could erode greenhouse gas pollution and oil savings benefits. Areas of particular concern are identified below.

Loss in Benefits from Increased Vehicle Size and Car/Truck Reclassification

The footprint-based standards do not provide any guarantee that automakers will actually achieve the projected 166 g/mile average in model year 2025. The fleet-wide projection is based on numerous assumptions including the vehicle footprint of future vehicles and the relative sales mix between cars and light-trucks (cars and light trucks follow separate footprint curves). CARB estimates a sales mix of 61% cars and 39% trucks in 2025, similar to today's sales mix. However, this mix could shift due to market forces or through compliance strategies adopted by automakers that either reclassify cars as light trucks or add size to vehicle footprints to qualify for weaker standards. Staff estimates as much as a 16 percent loss in emission reduction is a possible result from a modest shift to larger vehicles and an increase in the fraction of trucks versus cars sales.

⁴Note: The value is consistent with the federal footprint-based GHG standards for cars and trucks, but is higher than the federal estimate of 163 grams per mile based on California's sales mix.

⁵ As identified in the agencies "Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025."

Increasing the share of 4WD crossover-type vehicles may be an attractive strategy to automakers, potentially generating a windfall of credits due to weaker trucks standards. The fastest growing segment of vehicles over the past decade has been the crossover vehicle segment, growing from less than 5% in 2000 to nearly 25% of light-duty vehicles in 2010.⁶ The most popular of these vehicles are offered in 2WD and 4WD vehicles, such as the Ford Escape, Toyota RAV4, and Honda CRV. Due to federal definitions, the 2WD variants of these vehicles are classified as cars while the 4WD versions are classified as trucks subject to two different sets of standards.

The size of the gap between the car and truck standards at a given vehicle footprint provides an incentive to reclassify 2WD crossover vehicles as trucks. Today's popular 4WD versions of mid-size crossover vehicles emit 2 to 3% more global warming emissions than their 2WD counterparts. Yet the gap in the proposed standards between cars and trucks is greater, ranging from about 16 – 19 percent⁷. This large gap presents a potential loophole in the regulation and could result in a large loss in program benefits should manufactures find it more economical to migrate more vehicles to 4WD versions, subject to a less strict truck standard.

In addition to the gap between the car and truck standards, the relative stringency of the truck standards decreases as vehicle size increases. For the largest pick-up trucks, reductions in emissions required between 2016 and 2021 amount to less than 5% versus nearly 18% for the smallest trucks. Automakers may find it more economical to add footprint size to qualify for less stringent standards rather than add emission control technologies, further eroding benefits.

To prevent a loss in benefits both California and the federal agencies should adopt a backstop mechanism to ensure the anticipated global warming pollution reductions are achieved. A backstop mechanism could include a readjustment of the stringencies in future years to maintain the overall program benefits should a shift occur. Potential modification of the federal definitions for cars and trucks may also make reclassification of vehicles more difficult and provide some protection against a loss in program benefits. ARB should also continue to monitor the trends in vehicle attributes, car and truck sales fractions, and the impact of these trends on expected emissions reductions with annual reports to the board.

Upstream Emissions from Electricity and Hydrogen

The Union of Concerned Scientists strongly supports California's proposal to include the upstream emissions from electricity and hydrogen for plug-in and fuel cell type vehicles. Accounting for these emissions is important for properly evaluating the benefits of the program and giving the appropriate credit to these vehicles in comparison to internal combustion type vehicles.

However, as proposed, the federal agencies are not including upstream emissions accounting from model year 2017 through 2021 after which accounting will begin after a proposed cap is reached. Because of this discrepancy between the programs, California's acceptance of the federal program is

⁶ Based on data from Wardsauto

⁷ Range is based on the standards for a 44 sq. ft. footprint vehicle.

expected to result in a loss of approximately 3.7%⁸ of the benefits compared to the California proposal. Additional erosion of benefits is expected to occur from credit multipliers proposed federally.

The Union of Concerned Scientists supports inclusion of upstream emissions accounting in the federal program as well as California's program and we urge CARB to continue to work with the federal agencies as their rules are finalized to include full upstream emissions accounting.

Midterm Review

Under the agreement between California and the Obama Administration, a mid-term review of the 2022 through 2025 federal global warming pollution and greenhouse gas standards will be conducted. As part of this agreement, it is understood that should any changes to the 2022 standards occur as a result of the mid-term review, California would continue to accept compliance with federal standards as sufficient to meet CA standards.

There are significant benefits to implementing national standards in coordination with California's efforts and we support the national agreement between automakers, California and the Obama Administration. As part of this coordination, California should engage with the federal agencies in the mid-term review of the standards. However, California must also make clear that the agreement in no way precludes California from continuing to set its own more stringent vehicles standards in order to protect the health of Californians. California has explicit authority under the Clean Air Act to set its own more stringent vehicle standards than the federal government given California's unique air pollution challenges and public health impacts.

LEVIII – Smog-Forming and Particulate Matter Emissions

The Union of Concerned Scientists strongly supports the proposed standards to reduce smog-forming and particulate emissions from new vehicles. California's leadership on reducing tailpipe emissions has resulted in major technological advances in emission controls over the past 30 years. California's standards have provided the certainty for automakers and emission control technology companies to make the needed investments in technologies to reduce emissions from gasoline and diesel cars and trucks.

We urge CARB to fully implement the proposed 1 mg particulate matter standard by 2025 in order to deliver the public health benefits of lower particulate emissions sooner. One of the challenges with realizing the benefits of new vehicle tailpipe standards is the length of time needed for the in-use vehicle fleet to fully turnover, typically about 15 years. Waiting until 2028 to fully implement the 1 mg requirement as proposed means that the full benefits of the standard would not be realized until at least 2043, more than 30 years from now. Implementing the standard for all new vehicles by 2025, still more than a full decade away, provides substantial lead time for manufactures to achieve the standard. CARB could also continue to monitor technology development and make modifications well before the deadline should they be absolutely necessary.

⁸ Based on staff analysis presented in the Initial Statement Of Reasons, page 162.

Conclusion

Our cars and trucks remain a key contributor to poor air quality across our state and are the largest source of global warming pollution emissions. These standards put California on a solid, long term trajectory to cleaning up our air and meeting our state's 2050 climate goals. These standards will help reduce global warming pollution and protect public health, while saving consumers money at the pump and creating new jobs. We strongly urge the board to adopt the full package of advanced clean car standards at the January 2012 board meeting.

Sincerely,

A handwritten signature in black ink that reads "Don Anair". The signature is written in a cursive style with a large, sweeping initial "D".

Don Anair
Senior Engineer
Union of Concerned Scientists