



Union of Concerned Scientists



December 8, 2009

Mary Nichols, Chairman
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Subject: Summary of Staff's Preliminary Assessment of the Need for Revisions to the Zero Emissions Vehicle Regulation

Dear Chairman Nichols and members of the Board,

We write to offer our initial reaction to the Air Resources Board staff's ZEV white paper and to thank you for the opportunity to comment on this historic program. We concur with the Board's effort to focus the ZEV program's goals on reducing greenhouse gases and pledge to work with you in the coming year on a revision that will help the state achieve its greenhouse gas reduction goals while delivering cleaner air that protects public health.

The ZEV program is a critical complement to the LEV III Criteria Pollutant and GHG Standards, which together will help clean up California's air and reduce the risk of global warming. A successful revision of the ZEV program can help California continue its leadership role in adopting policies that advance clean vehicle technologies, benefiting the state itself and serving as a national and international model.

We agree with staff that the goal of the ZEV program is to move "...demonstration, low GHG emitting technologies to commercialization."¹ Now is a critical time for the Board to send a strong signal to the world on California's intent to move forward with a stronger ZEV program that is designed to achieve commercial levels of ZEVs by 2020 and a full transition to ZEVs in the new vehicle market before 2050. As well-stated in the staff white paper, "...ZEVs will need to reach 100% of new vehicle sales between 2040 and 2050, with commercial markets for ZEVs launching in the 2015 to 2020 timeframe"² in order to meet the goal of an 80 percent reduction in light-duty vehicle GHG by 2050. The Board must set a strong future course for ZEV rollout consistent with the urgent need for early action to meet our long-term goals.

¹ CARB (2009), *White Paper: Summary of Staff's Preliminary Assessment of the Need for Revisions to the Zero Emission Vehicle Regulation*, November 25, 2009, California Air Resources Board. P. 6.

² CARB (2009), P. 9.

In its March 2008 resolution, the Board directed staff to “redesign the 2015 and subsequent model-year requirements for the ZEV program: *strengthening further the program requirement* and focusing the program exclusively on the gold requirement” (emphasis added). We feel strongly that the concepts outlined in Policy Alternative 2 fail to meet this Board’s directive: they do not strengthen the program, they weaken it. Alternative 2 also fails to clearly identify the pathway for reaching the sales volumes the white paper states are needed to meet our climate goals. Policy Alternative 2 sacrifices key benefits of the ZEV program and could impede near-term commercialization of ZEVs and enhanced AT PZEVs (such as plug-in hybrids).

While we appreciate ARB staff’s desire to give automakers regulatory flexibility in meeting long-term air quality and greenhouse goals, we encourage ARB to find other ways to explore flexibility that are consistent with the goals of the ZEV program. We also understand the need for OEMs to implement their individual strategies cost-effectively, but we think Alternative 2 goes too far in this direction. Following are our specific concerns about Alternative 2:

- 1. It threatens the ZEV program’s core technology-forcing purpose and environmental benefits, and fails to drive commercialization of ZEVs.** Policy Alternative 2 does not ensure commercialization of ZEV technologies or equivalent emissions reductions. It loses the principle benefit of the current ZEV program – to serve as a technology-driver for the commercialization of ZEV technologies over the next decade. Absent goals for commercialization, the ZEV regulation loses its core purpose of being a technology-forcing standard. ARB analysis has recognized that waiting until the post-2020 timeframe to commercialize ZEVs places California on a path that is unlikely to reach an 80 percent reduction goal unless a “crash-finish” type scenario – with very steep and likely unrealistic ZEV sales trajectories – occurs post 2020 (p. 12, Figure 4).^{3,4} A delay in commercialization is inconsistent with state climate goals and would likely not be emissions equivalent over the 2050 timeframe.
- 2. It opens the door for bad actors by avoiding specific sales targets for ZEV commercialization.** By providing no specific sales target or pathway that an automaker would need to reach in terms of ZEVs, Alternative 2 does little to prevent an automaker from continually conducting demonstration programs.
- 3. It diverts automaker resources away from ZEV technology development, and harms automakers that have made significant investments in developing ZEV technology.** Alternative 2 would also likely result in automaker investments shifting away from ZEV technologies to conventional technologies under LEV III. Those that have made less progress would be encouraged to further reduce their ZEV investments in favor of conventional technologies. At the same time, it potentially punishes automakers that are commercializing ZEVs or Enhanced-AT PZEVs by removing their early-mover advantage and opportunity to sell credits. The companies that could be undermined include some major automakers as well as California start-ups like Coda and Tesla. This loophole significantly weakens the current ZEV program. Ensuring aggressive ZEV requirements that apply to all automakers is the only way to ensure that early movers stay the course and that all major producers also follow suit.
- 4. It unfairly and inappropriately shifts the burden onto the LEV program, alone, to drive technology advances all the way through wider commercialization.** The ZEV program is needed to drive technologies beyond pre-commercialization levels so that they can be diffused widely into the fleet through, for example, the LEV III Criteria and GHG pollutant standards. As ARB has noted, this is precisely what the ZEV program has done for technologies such as low-emission PZEVs and hybrid-electric AT-PZEVs.

³ Ibid, p. 12.

⁴ Ibid, p. 21 shows ZEV sales would need to grow from near 0% in 2018 to 30% of total sales by 2025 if a crash-finish approach is taken.

“Although ZEVs (battery electric vehicles, or BEVs, and fuel cell vehicles, or FCVs) have not yet achieved a commercial status, very low emitting conventional gasoline vehicles (partial zero emission vehicles or PZEVs) and HEVs such as the Prius (advanced technology partial zero emission vehicles or AT PZEVs) have been commercialized and are being sold by most vehicle manufacturers in growing volumes. Over one million PZEVs and 250,000 AT PZEVs have been delivered for sale in California as a result of the ZEV regulation.”⁵

Alternative 2 sets up potential additional hurdles for future LEV standards, where automakers still conducting demonstration programs can argue more strongly against stricter LEV standards based on a lack of commercialization and costs.

- 5. Battery and fuel cell technology readiness can no longer be used to justify ZEV implementation delays or regulatory changes.** Major automakers as well as new market entrants appear poised for commercialization of plug-in hybrid electric vehicles and pure battery electric vehicles in the next several years. At least two automakers have announced plans to aggressively market ZEVs over the next several years rather than in the 2020 timeframe.⁶ Nissan has announced it is gearing up production capacity for hundreds of thousands of BEVs as early as late 2012.⁷ Additionally, the ARB staff ZEV technology assessment cites a September 9, 2009 joint statement from automakers in support of commercialization of fuel cell vehicles from 2015 onward: “...a few hundred thousand units over the initial products’ lifecycles of FCVs could be commercialized.”⁸ The trajectory of battery and fuel cell technology development supports strengthening the ZEV program, not weakening it.
- 6. ARB must analyze whether Alternative 2 achieves equivalent criteria emission benefits from the ZEV program.** Air quality concerns have been, and remain, an important driver for the ZEV program. Stricter GHG emission standards under LEV III do not guarantee equivalent air quality benefits. While we recognize that stricter criteria emission standards will potentially be set through LEV III, an earlier ZEV introduction that leads to more vehicles on the road and sooner could also provide some additional benefits particularly for populated areas where air quality problems still remain a major concern. ARB has not evaluated this potential impact.
- 7. Small demonstrations, as proposed in Alternative 2, are not sufficient to support infrastructure investments needed to fully commercialize electric-drive technology.** California will need massive investment in alternative fuel infrastructure to allow for the commercialization of ZEVs – and government will likely be expected to play an active role through incentive funding. Critical mass on infrastructure investment will be achieved sooner if all automakers are investing in ZEVs, allowing government to reduce its need to invest in infrastructure. Policy Alternative 2 would continue our petroleum addiction, rather than foster cleaner fuel alternatives. It would create large uncertainties that may undermine the private and public infrastructure investments that are needed to make ZEVs fully successful.

⁵ Ibid. P. 6

⁶ Nissan and GM have announced plans for commercializing battery electric family cars. The Nissan LEAF is an all-electric, 100-mile range, 5-seater car that Nissan states will be available to customers in 2010 and “competitively priced in the range of a well-equipped C-segment vehicle.” GM states that its Chevrolet Volt will also be available in 2010, seat five, and have a 40-mile electric range before the gasoline engine engages.

⁷ *Automotive News*, “Nissan Expects 20,000 Initial Orders for Leaf EV” September 29, 2009. Nissan has stated it expects to have 20,000 pre-sold vehicles when the Leaf enters the market in late 2010. By late 2012, when its Smyrna, TN manufacturing plant is up and running, Nissan is expected to produce 150,000 Leafs and 200,000 Li-ion batteries a year.

⁸ CARB (2009), p. 14

8. ARB must send a strong regulatory signal that California policy will continue to support a home-grown ZEV industry. Alternative 2 does not send this signal. ZEVs support California's auto manufacturing jobs, while conventional vehicles do not. California has recently lost conventional vehicle manufacturing jobs due to the decision to close NUMMI in Fremont. But more than 60 California companies conduct research and/or manufacture electric-drive vehicles and/or components, according to Calstart.⁹ Moreover, more than \$1 billion in federal funds is directed to California companies such as Tesla and Fisker, and to electric transportation research and infrastructure installation in California. Based on these recent trends, ZEVs have a higher likelihood than conventional vehicles of supporting California's auto manufacturing jobs.

Additionally, in order to ensure wider public acceptance of ZEVs, the vehicles will have to appeal to a variety of population segments, including those with limited earning capacity. Therefore we suggest that staff evaluate additional complementary policy options such as loan guarantees for low-income groups willing to purchase/lease ZEVs, or incentives to the manufacturers.

We emphasize that these comments reflect our early thinking – just as the white paper reflects staff's early thinking. Our reaction to Alternative 2 was so strong, however, that we felt we must share our concerns with you at this early stage. We intend to actively and productively engage with you and staff, and look forward to many fruitful discussions in the New Year.

Sincerely,

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John Shears
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⁹ CALSTART, (2009) *Clean Transportation Technology in California*, Appendix B