

## Excerpts from Comments by California Air Resources Board on SAFE cars proposal (NPRM) 10-26-2018

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### FEDERAL FAILURES & EVIDENCE

**“Greenhouse gases endanger public health. EPA has recognized it.** Changing existing law to allowing emissions to increase violates the command in Section 202(a) of the Clean Air Act to regulate these emissions.”

“Since 2009, the industry has enjoyed consistently increasing sales...In response to this proposal the industry expressly voiced support for continuing one national program that includes California. **The existing harmonized national program has been an unquestionable success, improving vehicle performance and fuel efficiency, and reducing emissions.**”

**“The Administration has, from its inception, taken action to disrupt the unified program, at great cost to public health and to the certainty industry requires.** Because the facts do not support the Administration’s policy preferences, it has been forced to take a series of procedurally irregular steps to force a change. **The patent arbitrariness of each phase of the process underlines the arbitrariness of the final proposal.**”

“EPA failed to premise its revised Final Determination on a comprehensive and collaborative technical assessment report, as it did not meaningfully reflect the content of the 2016 TAR. **Thus, the Revised Determination made critical decisions on the fate of the program improperly.**”

“In reconsidering its Final Determination that led to the rollback proposal, **EPA did not follow its own regulations.** It did not present in a new technical report or in the rollback proposal and supporting Preliminary Regulatory Impact Assessment the “new information” it asserted was the basis for its actions.”

“This proposal is not the product of reasoned decision-making based on an objective review of the evidence regarding the development of technology, condition of the industry, need to protect public health and the environment, and potential to conserve energy. **It is a contrived solution to justify a predetermined outcome.**”

“...those statutes require EPA and NHTSA to promulgate increasingly stringent requirements to ensure continued reductions of air pollutants and continued increases in fuel economy from motor vehicles, yet the **Agencies proposed rollback would preclude any improvements in air quality or fuel economy.**”

"The Agencies estimate that their proposed actions would increase aggregate fuel consumption and emissions of CO<sub>2</sub> by 4 percent over the time period beginning 2016 and ending 2035, which they assert would not meaningfully impact the climate. **They fail to acknowledge that if this holds true, by century's end global ambient CO<sub>2</sub> concentrations will be at levels not present for millions of years. This policy performance is illegal.** "

“EPA gave essentially no weight to the factors Congress required it to consider—namely, the volume of dangerous air pollution and the need to continue to drive innovation in pollution control technology—**abdicating its statutory duty to protect the American people...**”

## **MARKET READINESS**

“As the EPA itself concluded just over a year ago in its first final mid-term determination...**technology is readily available for industry to meet the current vehicle emissions standards.**”

“According to the 2017 EPA Light Duty Vehicle Trends Report, **26% of projected MY 2017 vehicle production already meets or exceeds the MY 2020 CO<sub>2</sub> emissions targets**, showing that the number of vehicles meeting or exceeding the MY 2020 standards has steadily increased over time.”

“EPA attempts to justify the Proposed Rollback on its “particular consideration” for “high projected costs” and “the impact of the standards on vehicle safety.” But as shown throughout these comments, **the asserted costs are inflated, the actual costs are outweighed by the benefits, and the proposed rollback will harm public safety.**”

“The federal agencies have advanced a novel analysis in support of the rollback. They have acknowledged it departs from prior analyses. But the agencies have not explained why the extensive analyses developing the existing standards, and concluding they remain appropriate, are now invalid. **This is fatal for the proposal.**”

“With respect to zero-emission technologies, the Agencies assert that sales are declining and consumers are rejecting these vehicles. **This is false: while sales as a percentage have fallen, total sales have risen.** The apparent decline is only a function of an expanding overall national market.”

“**EPA and NHTSA wholly fail to analyze the economic effects of the climate change and public health implications of the rollback.** The Agencies assert these are insignificant, but that is only because the Agencies’ projections of climate change are so extreme.”

“NHTSA is statutorily obligated to consider EPA’s emissions standards in determining the fuel economy standards, but EPA is not obligated to do the same. **EPA, for its part, may not simply accept NHTSA’s analysis without doing its own. To have done so is arbitrary.**”

## **VEHICLE & TECHNOLOGY COSTS**

“The Agencies’ flawed proposal proceeds in two related steps. First, it **dramatically overinflates the costs of compliance with the existing standards. Then, it makes a series of unsupportable assumptions to insist that these inflated costs will lead to fatalities.**”

Note, though, that the plural “Agencies” is a misnomer: **The analysis appears to have been driven almost entirely by NHTSA,** even though EPA ultimately added its name to the proposal, so we frame our

comments accordingly. As we discuss below, EPA's own technical staff rejected many of the conclusions the Agencies now offer, as do independent experts.

"The proposal by NHTSA and EPA **overestimates implementation costs for the existing greenhouse gas and fuel economy standards.** The federal proposal provides no compelling or substantive evidence to support its assumptions, and is contrary to current, publically available information."

"These improper assumptions result in systematic overestimation of the costs needed to comply with the existing standards as well as unrealistic component and system designs. **These mistakes are compounded by the incorrect assumptions on advanced gasoline technologies which leads to exaggerated projections of the amount of electrification needed to comply with the existing standards.**"

"Based on current policies in place, the International Energy Agency is forecasting global **plug-in electric vehicle sales (BEVs and PHEVs) will increase from approximately 4 million in 2020 to 21.5 million by 2030, which translates to a 24% average year-on-year sales growth during this time period.**" \_

"Given rapid development over the last 10 years in automotive electrification, **reliance on specifications from vehicles that are 6 to 11 model years old, and likely had their components designed in the 2 to 3 years prior, is completely inappropriate to assess the costs and efficiencies of these components for 2020 to 2030 model year vehicles.**"

"In addition to starting with inappropriately old component efficiency assumptions, **the Agencies did not project any efficiency gains over time despite a demonstrated history of these components getting more powerful or smaller (or both), more efficient, and cheaper to manufacture.**"

"**In a substantial departure from past practice, the Agencies do not provide any substantive discussion or documentation of how the**

**costs were developed for the non-battery components of the electrification technologies in their analysis.”**

**“The assertion by the Agencies that rare-earth free magnets for use in BLDC (BLDC = brushless direct current) motors are only an announced technology, but not in production, is clearly false and represents another abdication of their responsibility to utilize the best available information to inform the development of their regulations.”**

**“Because the costing methodology for the non-battery components has also not been properly disclosed, there is no way to properly scrutinize how the costs were developed and determine if they are appropriate and reflective of reality.”**

**“Lack of understanding of vehicle electrification by the Agencies is also illustrated by the Agencies’ misclassification of the 2016 Chevrolet Malibu Hybrid as having a P2 hybrid drivetrain in both the PRIA and in the market input file for the CAFE Model... This is, in fact, not true. The Malibu Hybrid shares much of its drivetrain with the Chevrolet Volt, which is not a P2 system.”**

**“Classifying a vehicle’s powertrain correctly is extremely important for correct cost allocation and modeled fuel effectiveness improvements of components. This misclassification, along with the misunderstanding of the state of the industry in regards to technology are significant oversights in the analysis. This points to the Agencies’ lack of understanding about how electrification systems work and casts doubt that the technologies are appropriately considered in this analysis.”**

**“Without properly disclosing the version of BatPaC and the input assumptions that were used, insufficient information is available about what battery chemistries were used in the Agencies’ analysis.”**

**“Without knowing what cell chemistry or version of BatPaC were used, it is impossible to replicate the Agencies’ analysis and properly analyze what was done to make sure that the analysis was appropriate and reflective of reality. EPA repeatedly requested NHTSA to send**

**documentation and files pertaining to battery size and cost development as illustrated by this statement: ...”**

**“The modeled battery energy capacities and efficiencies for the NPRM do not match the capability of currently available vehicle designs, much less are they representative of future offerings.”**

**“In almost all cases, the electric motors for the 30 mile all electric range plug-in hybrids (PHEV30) and 50 mile all electric range PHEVs (PHEV50) are grossly oversized, and the combustion engines also have too much power assigned to them relative to current production vehicles.”**

**“Again, no justification has been provided for what the Agencies did in the NPRM but it is apparent that the Agencies did not compare and validate their modeled PHEV electric motor sizes against production vehicles and adjust if necessary, as they have done in previous analysis.”**

**“Because the Agencies disclose very little about how their costs were developed for these technologies, particularly on the non-battery component side, it is virtually impossible to understand what the drivers are for the increases in costs relative to the Agencies’ previous analysis for the 2016 Draft TAR and EPA’s Proposed Determination.”**

**“Regarding strong hybrids, the analysis has several errors, incorrect assumptions, and methodology flaws. These combine to result in inappropriate combinations of technologies with strong hybrids that are excessively costly and, in some cases, result in a disbenefit in fuel efficiency.”**

**“Clearly the combination of technologies is illogical as the selection of such an advanced gasoline engine (in the case of CEGR1) increases cost substantially yet it only marginally decreases or, in some cases, actually increases GHG emissions-- yet the CAFE Model still selects that combination for some vehicles. In addition to making the analysis falsely indicate higher costs and more technology than**

**what is actually needed, this again confirms that that CAFE Model is using inappropriate logic and/or algorithms.”**

**“The assumption that CISG systems are typically worse efficiency than BISG system reflects a lack of understanding as to how the systems work and the underlying physics involved.** Regardless the reason, the Agencies knew better and should have used a more appropriate estimate for the effectiveness of the system. By not doing so, the analysis has underestimated the benefits of mHEV 48V systems and overinflated the costs for compliance by forcing more costly technologies to be added to make up for the shortfall.”

“An objective review of the rollback proposal in the limited time provided for comment, without all the information used by the federal Agencies, reveals significant shortcomings, omissions, and unsupported assertions. NHTSA and EPA have not considered important aspects of the state of the art for controlling emissions from and efficiently using fuel in motor vehicles. **The Agencies have presented an analysis that is counter to the evidence before it, leading to unreasonable increases in the estimated costs to meet the existing standards. The conclusions about the available technology, and capacity to develop technology, are not based on reasonable inferences or technical expertise.”**

## **VEHICLE SALES**

“Furthermore, Agencies used inappropriate methods to estimate these impacts. **This means that one of the Agencies’ core premises – that consumers will not buy as many new cars under the existing standards – is unsupported.** Indeed, reality confirms: New vehicle sales, and prices, have continued to increase over the last decade, even as the program has been successfully operating.”

**“By using only a single average price in the model, the Agencies obscure all of the detailed dynamics in the highly competitive vehicle market that influence vehicle pricing and simply assume any price increase will decrease sales.”**

**“[t]he new vehicle sales model produces small reductions in projected sales under the Augural standards, while the scrappage model projects an increase in fleet size that far outweighs the sales reductions (by a factor of 60:1).** The combined result is a fleet size that grows much more rapidly than AEO projections.” U.S. EPA Analysis

**“In sum, the Agencies’ new sales model is invalid and should not be included in the CAFE Model. The new sales model glosses over or ignores the many factors that go into and frame the context of new vehicle purchases.** Notably, consumer valuation of fuel savings is completely ignored in this model, despite considerable evidence substantiating that consumers do value fuel savings, as well as the Agencies themselves concluding that consumers likely mostly or fully value future fuel savings at the time of purchase. Moreover, the results produced by the new sales model overestimate future sales projections, as compared to both historical data and other projections of future sales, by over 1 to 1.5 million vehicles.”

“However, it is not possible to replicate or verify the Agencies’ results from the new sales model because the Agencies did not provide the underlying data for this model, nor, apparently, are these exact data available anywhere else. CARB requested these data but the Agencies did not provide a response until four days before the end of the comment period, and that response was incomplete. As a result, **it is impossible to determine exactly why the new sales model produces its unexpected results. Instead, we are left with inappropriate and unreliable new sales projections.** Thus, the Agencies should refrain from using this new sales model.”

## **SCRAPPAGE**

“As with the new sales model, the dynamic scrappage model is similarly flawed. **The vehicle scrappage rates estimated by the Agencies are based on a model that produces results that are contrary to fundamental economic theory and good practices for setting public policy...** The model is also plagued by improper design and validation that disqualifies its use to predict the effects of sales and scrappage that the federal Agencies contend will occur. Of particular



note is that the scrappage model causes vehicle retention (and thus the total number of vehicles) to balloon exorbitantly under the existing standards.”

**“The vehicle scrappage rates estimated by the agencies are based on a flawed model that was not peer reviewed and produces results that are contrary to fundamental economic theory. As with the new sales model, the dynamic scrappage model is similarly plagued by improper design and validation that disqualifies its use for evaluating the impacts of the proposed rollback. Of particular note is that the scrappage model causes vehicle retention (and thus the total number of vehicles) to balloon exorbitantly under the existing standards.”**

**“Finally, all of the scrappage effects are premised on the increase in new vehicles prices. However the Agencies have not supported their assumption that rolling back the standard will be passed onto consumers; if vehicle prices are the same between the two standards (but the vehicles are qualitatively different), no scrappage effects would materialize.”**

“...total fleet population counts for the existing and rollback standards. Although total fleet size can increase in the future as a result of population and economic growth, **the sizeable difference in growth under the two policy scenarios is not supported.**”

**“EPA found it “hard to imagine any real-world scenario under which over 60 additional used vehicles are retained for each new vehicle that the sales model predicts will be unsold as a result of the higher new vehicle prices.”**

**“NHTSA’s written description in the draft NPRM indicates that the intent of the As-Received scrappage model was to capture the effect of changes in new vehicle prices and fleet fuel economy on the composition of total fleet (i.e., the balance between new and old vehicles and proportion of the various vehicle types), rather than the effect on the total fleet size.” U.S. EPA Analysis**

**“The implication of these higher survival curves is that the scrappage model produces unrealistic fleet population estimates to which unrealistic vehicle miles traveled (VMT) schedules are applied to exacerbate the impacts associated with the existing standards.”**

## **REBOUND EFFECT**

“This excessive growth in total vehicle population results in unrealistic total VMT estimates. As shown in *Figure VI-19*, like the fleet size estimates, the VMT predicted by AEO grows at a much lower rate than VMT output from the CAFE Model. **The CAFE Model’s average annual VMT growth of approximately 2 percent per year is more than double the Department of Transportation’s (DOT) Federal Highway Administration’s (FHWA) projections of future VMT growth for light-duty vehicles of 1.1 percent per year.**”

“The Agencies’ method of applying the rebound effect leads to overestimating the VMT change between the augural and proposed standards. **Overestimating the VMT change leads to the Agencies to inflate the estimates of costs that are associated with additional driving under the existing standards such as noise, congestion, and fatalities.**”

“The federal agencies improperly inflate the rebound effect. They begin with an overestimate that does not comport with academic literature. **The agencies cherry-picked the studies that they included to inflate the number, instead of using studies based on American drivers and using real odometer readings.**”

“It (NPRM) does not consider travel demand, congestion limits, or economic constraints. **The rebound estimate is then incorrectly applied to improperly double the resultant projected VMT, leading to significantly overstating the fatalities from this travel.**”

## **FATALITIES**

**“...it appears the fatality rate (fatalities per VMT) is actually higher under the proposed standards or, in other words, the risk of fatality is actually higher under the proposed standards. Further explanation of this issue is necessary.” From U.S. EPA analysis of NPRM**

**“It is remarkable that the Agencies ignored EPA’s advice. Doing so is the height of arbitrariness, and warrants judicial correction if the proposal is not withdrawn.”**

**“Now we will examine the proposition that people will drive 20% more if their cars become more fuel efficient. The Agencies are at pains to insist that a great many new fatalities will result, requiring them to act to save the American people from the roads. **This fatality analysis is also flatly wrong in several respects.**”**

**“NHTSA fails to properly account for the safety benefits that new safety technologies in future vehicles will generate for the entire on-road fleet.”**

**“NHTSA does not properly take into account how automobile manufacturers have improved, and will continue to improve, vehicle design to reduce mass while increasing crash safety...”**

**“The (NHTSA) analysis calculates incorrect fatality results because it inappropriately assumes a static future fleet, both in median weights utilized by the model to determine the magnitude of mass reduction impacts and in the weighting of crash type and frequency, while the rest of the analysis uses a dynamic fleet that actually changes in median weight from mass reduction and sales impacts and, accordingly, statistical likelihood of different crash types.”**

**“Fundamentally, the Agencies’ analyses suppose that fatalities should be increasing, because vehicle costs, vehicle pollution controls, and vehicle fuel economy have all been increasing for years. But this is just not what has been happening.” “Historical data has shown that the number of fatalities per 100 million vehicle miles has steadily decreased from about 44.6 in 1910 calendar year to 1.1 in 2015.... These fatality reductions can be attributed to**

continual improvements in vehicle safety technology, improvements in road safety design, and positive changes in driver behavior.”

“NHTSA’s safety model assigns safety coefficients to vehicles solely based on their model year and it fails to incorporate the effect that new safety designs and technologies will have on systematically improving fleet-wide on-road safety. **As a result, NHTSA’s safety model does not adequately quantify the safety benefits of future improvements to vehicle safety technology, road design, and societal changes in driver behavior.**”

“**The implementation of vehicle safety features like crash avoidance, pre-collision assist, lane departure warning, and blind spot assist are expected to substantially reduce total fatalities; not just from new vehicles that are equipped with these features but also from old vehicles.**”

“**In addition to vehicle safety feature improvements, continual improvements in road safety design are expected to reduce fatality rates of the entire on-road fleet.** Examples of past improvements include placement of speed activated speed limit signs to discourage speeding, improvements to roadside signage and signal systems, strategic placements of speed bumps, addition of highway rumble strips as lane departure warnings, strategic placement of roadway medians to avoid dangerous head-on collisions, and placement of roundabouts to reduce collisions at intersections.”

“**These advances in road safety design improve safety for all on-road vehicles, and we can expect that these improvements will continue into the future. Nevertheless, NHTSA does not capture these systematic safety improvements in their safety model.**”

“**NHTSA’s modeling of older vehicles is flawed since it does not control for factors that can have a significant influence on fatality risk, such as crash circumstances and driver characteristics. The Agencies admit this in the NPRM by stating that the “CAFE model lacks the internal structure to account for other factors related to observed fatal crashes – for example, vehicle speed, seat belt use, drug use, or age of involved drivers or passengers.**”

**“In sum, the Agencies have created an impressively flawed safety analysis that incorrectly and unreliably predicts more fatalities under the existing standards. The Agencies then propose a an unexpected solution: to make driving more expensive as a disincentive.”**

## **PUBLIC HEALTH HARMED**

“For years, this partnership has dramatically improved air quality throughout the country, with the benefits vastly outweighing the costs. The Agencies’ proposal reverses this progress. **It would yank away tools states, including California, need to comply with state and federal ambient air quality standards, and to meet climate mandates. The result is perverse: Failure to comply with these standards has serious financial and public health consequences, yet EPA is using its authority to render these standards nearly impossible to meet,** and especially so as climate change worsens air quality. Further, EPA is critically undermining a wide range of state laws and policies, developed in reliance upon its current standards and its adjudicatory decision to grant California a waiver for the current standards.”

**“In the Clean Air Act, the U.S. Congress developed a program based on science and implemented by state and local regulators to provide safe, healthy air to the American population.”**

**“Delaying implementation of the latest ozone NAAQS would harm the health and well-being of millions of people, not only in California but throughout the country. Simply put, meeting the ozone standard is a public health imperative.”**

**“All of the California ozone and PM2.5 SIPs submitted to EPA since approximately early 2016 have included benefits of the California Advanced Clean Car program in their light-duty vehicle emission inventories.”**

“For the South Coast Air Basin to attain this standard, California must reduce NO<sub>x</sub> emissions by an additional 118 tons per day NO<sub>x</sub> in 2031

beyond the current programs already providing significant NO<sub>x</sub> reductions. **This means California must ensure more ZEVs are introduced than are currently required by California's light-duty fleet ZEV requirements.**"

**###**