August 25, 2020

Clerk of the Board
California Air Resources Board (CARB)
1001 I Street
Sacramento, CA 95814

Re: Comments Regarding the Proposed Heavy-Duty NOx Regulation

Chair Nichols and Members of the Board:

Tesla strongly supports CARB's efforts to address the significant public health and community impacts of air pollution and establish a robust heavy-duty vehicle NOx standard. As a mission-driven company dedicated to accelerating the transition to sustainable energy, a stringent standard is entirely consistent with Tesla's goals. By removing diesel from the heavy-duty (HD) equation altogether, Zero Emission Vehicles (ZEVs) represent a superior solution relative to other approaches that seek to reduce emissions by increasing the efficiency of diesel trucks or via post-combustion treatment. While these solutions can reduce NOx emissions, unlike ZEVs, they do not eliminate them.

Despite the unambiguous advantages that ZEVs offer in terms of NOx mitigation, the current proposed standard in the NOx rule is not set at levels that reflect the expected uptake of ZEVs in the coming years. By not recognizing the impact of ZEVs in the NOx standard, the current rule is less stringent than it should be and appears inconsistent with the other policies CARB is developing to transition the heavy-duty transportation sector to zero emission technologies, including the Advanced Clean Truck (ACT) rule and the forthcoming ZEV fleet purchase mandate. To address this, we strongly encourage CARB to increase the stringency in the NOx rule to reflect the expected penetration of HD ZEV vehicles pursuant to these policies.

One of the unfortunate knock-on effects of the decision to not include ZEVs in setting the stringency of the standard is the discussion around the credit trading provisions for ZEVs. In Tesla's view, proposals that reduce the role of ZEVs in the regulation are misguided, as HD ZEVs represent the best NOx mitigation strategy, and should be recognized as such through the crediting provisions. Including ZEVs in the NOx rule and allowing their manufacturers to generate credits is important for a number of reasons, as discussed further below.

- <u>It is consistent with the notion of technological neutrality.</u> As a general matter of policy development, in setting an emissions performance standard, such as the NOx rule, the regulation should be agnostic with respect to what technology is used to meet, and ideally beat, the standard. Excluding or limiting ZEVs in the proposed regulation's crediting

provisions would promote one set of solutions to reduce NOx, consisting of efficiency measures and post combustion emission controls, over better solutions, like ZEVs that represent a more effective means of addressing the problem.

- It will hasten the pace of clean vehicle deployment. Early action NOx credits generated by ZEVs will create an additional incentive for manufacturers to pull forward deployment of HD ZEVs and accelerate the pace of fleet turnover to zero and lower NOx vehicles.

- It can offset the loss and/or uncertainty of critical funding programs like the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). As a result of the current economic crisis, funding for HVIP, one of the key policies envisioned to support HD ZEV commercialization in CA, is at risk. While we hope that the HVIP will receive incremental funding, the timeline for that is highly uncertain. NOx credits generated by ZEVs under the NOx rule can help offset some of that loss by creating additional value that can be passed onto prospective buyers in the form of lower prices. This can help ease the burden for compliance with ACT and the forthcoming ZEV fleet purchase rule.

- It sets an important precedent for Federal NOx regulation reform. How CA reforms its NOx rule will inform changes in the Federal heavy-duty NOx rule[1] and set an important precedent. NOx regulation at the Federal level represents a meaningful opportunity to incentivize rapid deployment of HD ZEVs and realize significant emission reduction benefits resulting from a stringent nationwide standard. Weakening or eliminating the role of ZEVs in the standard would send the wrong signal and would undermine efforts to leverage a Federal NOx rule to advance ZEVs. This is especially important since, unlike California, EPA has not indicated any plans to establish a Federal ACT or ZEV fleet purchase mandate.

CARB staff is considering additional actions to address concerns from some stakeholders on the inclusion of ZEVs in the NOx regulation. Specifically, the current regulation enables the use of NOx credits generated by ZEVs until 2030. This sunset provision would ensure that many of the credits generated in the program will have only a limited timeframe within which they can be generated, traded, and used to offset deficits. Tesla supports the current sunset date and does not recommend moving it forward given the limitations the 2030 sunset already creates on the opportunity to utilize these credits.

[1] See, EPA, Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine Standards, 85 Fed. Reg. 3306 (Jan. 21, 2020).

If CARB takes action to prevent additional dilution of the standard, Tesla asserts that there are better options that are more consistent with California's interest in advancing the best clean transportation solutions.

First, Tesla recommends eliminating the ability to transfer credits from the existing federal NOx program into the new CA credit system. These federal credits are based on deployment of legacy technologies dating as far back as 2010. The regulation should not reward past deployments at the expense of incentivizing new technologies.

Second, Tesla recommends eliminating the provisions in the regulation that provide credit multipliers for hybrid powertrains. Under this approach, the proposed regulation is asserting that hybrid powertrains are more valuable, in terms of NOx mitigation, than ZEVs. For example, MY 2022 and 2023 hybrid powertrains generate 2.5 times as many credits as a ZEV if used to offset deficits associated with MYs 2031 and thereafter. Notably, in 2031, ZEV credits have been taken out of the regime altogether, and any early action ZEV credits would have already expired pursuant to the 5-year life that ZEV credits have under the proposed rule. It simply does not make sense to favor hybrid technologies in the NOx rule over zero emission solutions, nor does it comport with the approach taken in the ACT. Under the ACT, while Near Zero Emission Vehicles (NZEV) are able to generate credits, the regulation both discounts the value of these credits and puts limits on the extent to which they can be used to meet a manufacturer's compliance obligations.

Additionally, Tesla recommends harmonizing the regulation with provisions in the ACT rule that limit the use of credits generated from lower weight class ZEVs to offset heavier weight class vehicle deficits. Under the ACT, credits generated within a weight class can only be used to offset deficits for that same weight class or for a lower weight class. For example, credits generated from Class 4 ZEVs may not be used to meet compliance shortfalls associated with Class 7-8 tractors.[2] This framework is not currently in place within the NOx rule, and manufacturers are able to use NOx credits generated by ZEVs from any weight class to offset deficits in any other weight class. Tesla recommends changing the NOx regulation to use the same framework as the ACT to ensure the emissions benefit will always be equal or greater than what is being offset.

Lastly, there has been some uncertainty within the stakeholder community about the ability for manufacturers to trade credits, though Tesla understands from staff that the intent has always been to allow trading between manufacturers. As such, we recommend a clarification, similar to language used in the ACT. In the ACT, the ability for manufacturers to generate and trade credits is explicitly stated in section 1963.2(e), declaring that "Credits may be traded, sold, or otherwise transferred between manufacturers." Similar language should be included in the NOx rule to avoid any confusion regarding the ability for manufacturers to buy and sell credits.

[2] Advanced Clean Truck Rule Section 1963.3(c) and 1963.3(e).

Tesla reiterates our support for a robust NOx standard as a key element in the overall suite of policies CARB is pursuing to transition heavy duty vehicles to clean and zero emission solutions. We appreciate CARB's extensive work developing the proposed rule and the opportunity to provide our perspective and recommendations.