



January 21, 2020

Chair Mary Nichols and Members of the Board
California Air Resources Board
1001 I St.
Sacramento, CA 95814

Re: Assessment of CARB's Zero-Emission Vehicle Programs per SB 498

Dear Chair Nichols and Members of the Board:

Tesla, Inc. (Tesla) appreciates the opportunity to provide feedback on the proposed policy recommendations in the draft assessment on the California Air Resources Board's (CARB) zero-emission vehicle (ZEV) programs that staff has developed per direction provided in Senate Bill (SB) 498. SB 498 (Skinner, Chapter 628, Statutes of 2017) directs CARB to analyze a number of ZEV related actions while also developing recommendations for increasing the use of ZEVs in California as well as how to best increase fleet usage of ZEVs.

As the only California-based manufacturer of electric vehicles at scale with a significant California and global charging infrastructure network, Tesla recognizes the importance of undertaking an assessment of this type, particularly in the context of achieving the state's climate, air quality, and ZEV goals within the next decade and beyond.

The draft assessment includes eight broad categories for policy recommendations that when combined with existing programs, continue to drive California toward its 5 million ZEVs by 2030 goal.¹ Tesla agrees that the broad categories identified appropriately capture focus areas for future policy recommendations. While we generally support most of the policy recommendations, we provide brief comments below focusing on the following categories:

- Predictable, long term funding for CARB's ZEV programs
- Opportunities for renewable integration and lowering ZEV fuel costs
- Long term, holistic infrastructure planning and investment
- Local policy innovation and streamlining
- Fleet adoption and associated infrastructure deployment
- Workforce development

¹ Draft Assessment, p.V; The categories include: 1) Incentives and pricing strategies, 2) Lower fuel costs, 3) ZEV refueling infrastructure, 4) Local policies, 5) Fleet adoption, 6) Outreach and education, 7) Workforce development, and 8) Program flexibility.

I. Predictable, long term funding is important to drive ZEV adoption at scale.

Multiple sections in the draft assessment highlight the need to provide consistent and sustainable funding for any clean transportation programs. Specifically CARB staff recommends that it is important to “provide predictable and expanded funding for CARB’s ZEV incentive programs that is sufficient to drive consumer demand.”² Staff notes this is particularly important to minimize disruptions to key programs and instill consumer confidence in ZEVs. Tesla agrees this is a critical policy recommendation to drive ZEV adoption in the near term. Our extensive sales and customer engagement experience confirms that uncertainty undermines consumer confidence and slows ZEV adoption, especially for first-time ZEV consumers not only anxious about new vehicle technology but also about making a purchase of a magnitude second only to their homes. Additionally, we urge CARB to develop more rational rebate structure that declines to zero over a reasonable timeframe as penetration increases. This gives consumers and the market longer-term certainty and decision-makers comfort that rebates will not last indefinitely.

We agree with CARB’s recommendations on pricing strategies such as “fee-bates” that internalize the social and environmental costs of carbon and air pollution and sales tax exclusions on light and heavy-duty vehicles. We also urge CARB to consider exclusion of sales tax on the value of any non-ZEV or higher polluting vehicle traded in for a fully electric vehicle. In other words, only the difference between the purchase price and the trade-in value would be subject to applicable sales taxes.

II. Explore policies that can lower ZEV fuel costs while promoting renewables integration.

CARB staff highlights that “predictable, cost-competitive and stable fuel costs are critical to encourage consumers and fleets to choose ZEVs. Electricity costs for transportation electrification are difficult to predict and can be high, especially for commercial entities.”³ Tesla agrees that establishing electricity rates that more closely align with commercial electric vehicle (EV) customers’ usage of the grid, particularly in early days of lower load factors and utilization, and move away from demand charges in the near term, is important. This issue is already being addressed by the investor owned utilities (IOUs) via the California Public Utilities Commission (CPUC) but it is also important for other utilities to evaluate opportunities to provide more consistent commercial EV rates.

At the same time, CARB staff notes that on-site solar and storage among other distributed energy resources and load management can facilitate the integration of EVs onto the

² Draft Assessment, p.97

³ Draft Assessment, p. 100

electricity grid. In addition to developing commercial EV rates, Tesla supports exploring opportunities for solar and storage paired with EV charging infrastructure to power charging stations during grid outages and provide other grid services, the viability of which is dependent on a number of factors such as site location, operating cost, and use case. We recommend CARB also acknowledge the need for increased resiliency of the transportation network in case of extreme weather events or public safety power shutoffs, which are becoming more frequent.

Throughout the assessment, CARB proposes recommendations supporting hydrogen fuel or infrastructure that we respectfully find illogical. Obviously, we are fully vested in battery electric technology. However, after about 30 years of some form of public subsidy or support with, frankly, little to show for it (e.g., public retail hydrogen fueling stations increased from 25 in 2007⁴ to 41⁵ today) and the urgency we face to reduce carbon emissions, we question whether the public should continue investing a technology that may not ever reach cost-parity with electricity or reduce emissions to an equivalent degree/\$ investment.

We estimate that the state has provided about \$30,527 in vehicle and fueling infrastructure incentives or awards, for each of the approximately 5,528 FCEVs (fuel-cell EVs) on CA roads today—compare this with about \$2,351 per 253,430 BEVs as of January 1, 2019.⁶ Taken to its extreme and using the above figures, the state would have to spend over \$7 billion in order to incentivize the same number of FCECs as BEVs, in which the state has invested nearly \$600M. The assessment also recognizes that “renewable hydrogen production, storage, and distribution is energy intensive...”⁷ so lifecycle emissions and costs for all fueling technologies must be taken into account. Finally, examining the vehicles themselves, the fuel efficiency of the leading BEVs on the road today is over double that of the leading fuel cell vehicles.⁸ While fuel diversification is a laudable goal in theory, we find it challenging to discern any public health or climate justification for disproportionately large investments in fuel cell passenger vehicles or fueling infrastructure.

III. Develop long term, holistic infrastructure planning and investment.

The draft assessment highlights that charging infrastructure is a key component for achieving ZEV policies and goals in California and provides several relevant

⁴ https://en.wikipedia.org/wiki/California_Hydrogen_Highway#cite_note-5

⁵ Draft Assessment, p.7

⁶ Figures are conservative since not all vehicles received a rebate; vehicle rebates figures from cleanvehiclerebate.org; infrastructure figures from CEC's 19/20 Investment Plan Update for the Clean Transportation Program; vehicles registered in CA as of Jan 1, 2019-- dmv.ca.gov/portal/dmv/detail/pubs/media_center/statistics.

⁷ Draft Assessment, p. 100

⁸ Fuel efficiency of FCEVs at: https://www.fueleconomy.gov/feg/fcv_sbs.shtml and BEVs at; <https://www.fueleconomy.gov/feg/PowerSearch.do?action=noform&path=1&year1=1984&year2=2020&vtype=Electric>

recommendations including establishing a working group dedicated to heavy-duty ZEV infrastructure and expanding the California Energy Commission's (CEC) Clean Transportation Program beyond 2023. Additionally, CARB recommends a continued focus on strengthening requirements in the California Green Code for EV-readiness including incorporating existing buildings into the process.⁹ Tesla is supportive of this effort and recently co-authored a report with ChargePoint, CalETC and Energy Solutions that highlights the benefits of incorporating existing buildings into the building code when major alterations or resurfacing takes place.¹⁰

Furthermore, the assessment references opportunities to leverage regional and local ZEV readiness planning to incorporate infrastructure deployment and set goals.¹¹ Staff recommends "increasing support of CEC's ZEV regional readiness planning and implementation grants and similar grants from Caltrans that take into account newer vehicle and infrastructure technology, the evolution of mobility, an integrated approach to light-, medium- and heavy-duty applications."¹² Tesla previously submitted comments to the CEC expressing support for continued investment in regional ZEV readiness and providing local communities opportunities for engagement and re-evaluation of any existing plans as ZEV deployment grows. This continues to be an important focus area in the near term and Tesla is supportive of its inclusion with the list of recommendations as currently outlined.

IV. Local policy innovation and streamlining processes for infrastructure deployment should continue to be a priority.

The draft assessment provides an overview of both the opportunities and challenges local jurisdictions face in driving ZEV adoption. One of the priorities at the local level for charging infrastructure deployment is helping to streamline the permitting process, which continues to be a significant barrier that adds soft costs and delays deployment timelines, sometimes indefinitely. As noted in the assessment, "in some cases, permitting for charging stations in California can take nearly twice as long as the national average, with permitting delays and recommended design changes for charging stations contributing to extended project timelines and budget implications"¹³ Efforts such as GoBiz's recently developed streamlined permitting guidebook for EV charging stations are an excellent resource and first step to continue to improve the process but more action is needed in order to ensure infrastructure is deployed quickly and efficiently. Therefore, Tesla continues to encourage additional policy focus on streamlining permitting and local processes and finding opportunities to integrate infrastructure deployment as part of the education and outreach efforts that can

⁹ Draft Assessment, p. 103.

¹⁰ <https://caletc.com/energy-solutions-report-finds-that-increasing-the-number-of-electric-vehicle-capable-parking-spaces-at-new-buildings-and-adding-ev-capable-parking-spaces-to-existing-buildings-when-undergoing-certain/>

¹¹ Draft Assessment, p.105.

¹² Ibid.

¹³ Draft Assessment, p.90.

help drive ZEV adoption. It is particularly important to help local jurisdictions become familiar with the various types of different charging projects and configurations that may be deployed as the technology continues to evolve.

V. Providing tools that assist all fleets in their efforts and assessments to electrify is necessary.

Per SB 498, the assessment dedicates an entire Chapter to recommendations for fleets and throughout the document discusses the various challenges that fleets face when considering moving to ZEVs. Among the items highlighted for fleets to consider is how to best refuel utilizing charging infrastructure, which is highly dependent on the fleet's application, as well as the electricity costs that impact the total cost of ownership for a fleet. A particularly interesting recommendation that staff provides and which merits further exploration is the concept of an electricity rate "ombudsperson" that would help fleets identify how to best electrify and navigate electricity costs.¹⁴ Beyond the actual cost to acquire ZEVs, infrastructure and electricity rates are a critically important component impacting ZEV operations for fleets and should be actively considered and scoped into any future policy recommendations regarding ZEV fleet adoption.

VI. Workforce development is a key component to driving ZEV development and manufacturing in California.

The draft assessment discusses the importance of collaborating with the private sector to create programs that develop a workforce that is capable of supporting ZEV adoption, which should include a focus on skilled manufacturing jobs. Specifically, it is noted that "workforce training pipelines into the zero-emission vehicle and infrastructure technology sector will be critical to meeting the demand for workers to support the growing ZEV market and it is possible to engage with local communities and include disadvantaged community members in these efforts."¹⁵ Tesla fully agrees and has, in fact, developed or in the process of developing service technician, tool and die, and other skilled manufacturing pipeline programs and state-certified apprenticeships at community colleges and other institutions across the state and nationally.

Tesla looks forward to learning more about opportunities to implement and iterate on several of the policy recommendations included in the draft assessment.

¹⁴ Draft Assessment, p.110.

¹⁵ Draft Assessment, p.95.

Sincerely,

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