December 11, 2017

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

**RE: Proposed Fiscal Year 2017-18 Funding Plan for Clean Transportation Incentives**

Dear Chair Nichols and Members of the Air Resources Board:

I am writing on behalf of Tesla to share our comments on the Proposed Fiscal Year (FY) 2017-18 Funding Plan for Clean Transportation Incentives (Funding Plan).

As highlighted by CARB staff during the October 4, 2017 workshop and within the proposed plan, the Funding Plan is designed to help achieve California's clean air goals including meeting the "federal health-based ambient air quality standards for ozone by 2023 and 2031 as well as fine particulate matter (PM 2.5) air quality standards."[1] A 2017 American Lung Association (ALA) report lists mainly California metropolitan areas in the top-10 most polluted cities for ozone or particulate matter in the country further highlighting the importance of meeting these near and long term targets.[2] Additionally, the freight transportation sector in California is responsible for generating a high portion of local pollution especially in parts of the state with poor air quality.[3] Thus, among the other goals driving the Funding Plan is "deploying over 100,000 freight vehicles and equipment capable of zero-emission operation and maximizing near zero-emission freight vehicles and equipment powered by renewable energy by 2030."[4] Given these clean air goals, Tesla supports the focus on zero-emission vehicles (ZEVs) first and foremost where feasible when allocating clean transportation incentives, which is supported by the projects outlined in the proposed Funding Plan.

Tesla generally supports the continued investment in the low carbon transportation program at the maximum levels appropriated by the California Legislature and as staff has outlined in the proposed Funding Plan. Specifically, the increased investment authorized for the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) at $180 million is important at this time for the nascent heavy-duty (HD) ZEV market to scale and enable California to meet its ambitious greenhouse gas (GHG) emissions reduction and air pollution standards targets. Our comments focus on the program-specific elements of the proposed Funding Plan rather than on additional recommendations regarding the funding levels. Below, we address the following:

- **Clean Vehicle Rebate Program (CVRP) pre-qualification process** pilot data will be important to assess scaling across the state.
- **HVIP funding level** proposed in plan and program changes will help meet increased market demand.
- **Zero-and near zero-emission warehouse program** should include the opportunity to pilot renewable integration with HD charging infrastructure.

[1] Funding Plan, p. I-2.
[2] American Lung Association. State of the Air 2017. Available at http://www.lung.org/assets/documents/healthy-air/state-of-the-air/state-of-the-air-2017.pdf.
[3] California Sustainable Freight Action Plan, p.1.
[4] Funding Plan, p. I-2.

- **Three Year Investment Strategy for HD vehicles and off road equipment** is important to provide market participants a longer term direction for potential funding.

## I. Chapter 3 Light-Duty Sector Investments

While the number of available ZEV and near ZEV light-duty (LD) vehicles has expanded rapidly over the past few years, barriers continue to remain for LD ZEVs to be accessible to all customers. These barriers include the cost of the vehicles as well as battery range and access to electric vehicle (EV) charging infrastructure. With the expected growth of affordable, mass-market EVs such as Tesla's Model 3, the LD EV market is expected to continue to scale in the long term and move towards the need for the LD fleet to be largely ZEV by 2050.[5] In the near term, the projects proposed under the Funding Plan for LDs will be critical to meeting the 1.5 million ZEVs by 2025 and the 4.2 million ZEVs by 2030 targets as the market today is "still in its infancy and it will take at least another 5 to 10 years before the market reaches sustainability."[6]

### A. CVRP Pre-Qualification Process

While Tesla does not have specific recommendations for CVRP within the current proposed Funding Plan, we are interested in the forthcoming updates on the impact the pre-qualification process, akin to a point of sale rebate structure that it is being piloted in San Diego, will have on the program once deployed at full scale across the state.[7] Offering an incentive as close as possible to the point of sale has broadly been considered the most effective method of driving EV sales.[8] A point of sale incentive may also help increase overall customer awareness.[9]

Staff also previously indicated that an update regarding the implementation of AB 134 procedures concerning the CVRP would be provided during the December 2017 Board hearing. Tesla intends to provide feedback after information on this aspect is made available.

## II. Chapter 4 Heavy-Duty Sector Investments

As highlighted in the Funding Plan, "the proposed projects are based on staff's assessment of the state of each technology and its role in the long-term transformation of the heavy-duty fleet to zero-emission where feasible and near zero-emission powered by clean, low-carbon renewable fuels everywhere else."[10] Given the long term impact these projects can have on reducing nitrogen oxides (NOx) and other emissions, we agree with staff to focus funds first and foremost on HD ZEVs whenever feasible to achieve climate and air pollution standard goals including maximum NOx reduction. Maintaining the increased investment levels similar to those outlined for the HD sector in the proposed Funding Plan and the Three Year Investment Strategy as more HD ZEVs become available in 2019 and beyond will help spur this new market segment in the early stages of deployment. For instance, Tesla recently unveiled its Semi Truck, an all-electric Class 8 vehicle that consumes less than two kilowatt-hours of energy per mile and is capable of 500 miles of range.[11] Production is expected to begin in 2019.[12]

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[5] Funding Plan, I-23; Funding Plan, pp.I-24-25.
[6] Funding Plan, p.I-2; Funding Plan, p. I-25.
[7] Funding Plan, p.I-29.
[8] "Cash at the time of purchase is by far the best financial incentive – over twice the value of a tax credit." Plug in America, *Evaluating Methods to Encourage Plug-in Electric Vehicle Adoption: A review of reports on PEV incentive effectiveness for California Utilities* (October 2016), p.13.
[9] ICCT, Principles for Effective Electric Vehicle Design (June 2016), p. 6. Available at: http://www.theicct.org/sites/default/files/publications/ICCT_IZEV-incentives-comp_201606.pdf .
[10] Funding Plan, p.v.
[11] Tesla. Available at: https://www.tesla.com/semi/.
[12] *Ibid*

**A.** HVIP Funding

As the proposed Funding Plan notes, the increased $180 million budget, "compared to past allocations, provides an opportunity for California to continue to invest in the deployment of clean heavy-duty technologies in new vehicle applications and fully meet market demand."[13] Further, the plan indicates that the increased allocation provides the opportunity to also fund infrastructure, one of the greatest barriers for advanced technology vehicle deployment.[14]

The Funding Plan also highlights several proposed HVIP changes including a new tier for Class 7 and Class 8 trucks and a voucher enhancement for electric vehicle supply equipment (EVSE).[15] Tesla supports both of these staff recommendations along with the opportunity to discuss implementation details in the working group process along with a reevaluation of the effectiveness of these changes during the workshop process for the FY18-19 Funding Plan. In future years, as HVIP eligible vehicles transition to eventual wide scale adoption of HD ZEVs, funding levels per vehicle or fleet can be ramped down over time to match the scale of market deployment levels throughout the commercialization phases.[16]

**B.** Zero-and Near Zero-Emission Warehouse Program

SB 132 allocated $50 million towards zero- and near zero-emission warehouses and technologies, which staff is proposing to be funded under the Zero- and Near Zero-Emission Freight Facilities Project. Among the list of elements for an eligible project application is the fueling infrastructure including charging infrastructure as well as renewable power generation and energy storage systems.[17] Solar and storage have the potential to manage grid integration for high-power charging infrastructure located at warehouses and can potentially mitigate costs for fleet operators. It will be important to pilot the opportunity for renewable integration with HD charging infrastructure. Therefore, we are supportive of the inclusion of charging infrastructure as well as solar and storage in this program proposal. We look forward to learning more about this initiative in the work group process.

**C.** Three Year Investment Strategy HD Vehicles

Tesla supports the development of the Three Year Investment Strategy for HD vehicles as it provides market participants a clearer, longer term direction of the availability and focus of various funding mechanisms based on advanced technology market assessments. As outlined, the Investment Strategy highlights the role of incentives during various stages of commercialization, the ability to reduce per vehicle funding over time, and the various metrics of success that can be utilized to make this determination. Under the metrics of success, the discussion of qualitative observations is important because it demonstrates the need to also focus on the cross-sectoral benefits certain technologies can provide when compared to each other that can be difficult to measure.[18]

Furthermore, the Investment Strategy proposes to apply the concept of "beachheads" to focus funding on technologies and applications that can potentially transform the market and spread to broader applications.[19] While utilizing the concept of beachheads appears to be a reasonable strategy, we also recommend that if a particular vehicle technology advances more rapidly than expected and moves to the commercial stage, that the focus areas within the investment priorities for each fiscal year also be updated to reflect this change (see Table II-1). Finally, it is important to recognize the additional

[13] Funding Plan, p.I-77.
[14] Funding Plan, p.I-78.
[15] Funding Plan, pp. I-80-82.
[16] Funding Plan, p.I-68.
[17] Funding Plan, p. I-69.
[18] Funding Plan, p.II-15.
[19] Funding Plan, p. II-2.

observations provided within the plan around fueling infrastructure, strong policy signals, and California as a first adopter in order to ensure the success of any investments in the HD ZEV sector and other technologies.

We look forward to working with staff and other stakeholders to continue to refine the Investment Strategy going forward and, as well-described by CARB, "enable a more strategic focus on driving actions needed over the next three years to both support the transformation required for the long-term, as well as needed near-term benefits."[20]

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Tesla appreciates the opportunity to provide feedback on the Proposed FY 2017-18 Funding Plan and in particular the HD ZEV components and the Three Year Investment Strategy. As reflected in these comments, we continue to support focusing investments on ZEVs first and foremost, wherever feasible, to help meet California's GHG emissions reduction and air pollution standards goals.

We look forward to engaging in the development of future funding plans for clean transportation programs.

Sincerely,

Francesca Wahl
Sr. Policy Associate, Business Development and Policy

[20] Funding Plan, p.II-47.