October 17, 2019

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

Re: 2019-20 Funding Plan for Clean Transportation Incentives (Funding Plan)

CARB Board Members:

Thank you for the opportunity to provide comment on the above Funding Plan. As one of the state's largest manufacturing employers with more than 20,000 employees, Tesla is appreciative of the state's comprehensive efforts to accelerate the deployment of clean vehicles. We are proud to be the only auto manufacturer completely aligned with the state's climate and air pollution goals, and are actively supporting California's right to protect the health of its citizens in judicial and regulatory forums.

Our comments herein pertain to the Clean Vehicle Rebate Project (CVRP) and the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). Importantly, we wish to acknowledge the hard work and diligence of staff in balancing many competing objectives in the development of the Funding Plan.

CVRP

The CVRP currently faces a problem of success: overwhelming demand for battery electric vehicles (BEVs). Unfortunately, CARB lacks sufficient funding to keep up with this demand as reflected in the staff proposal, which, in essence, would make it harder to buy a ZEV. While some of the proposed changes to eligibility rules are sensible in light of this challenge, others are not commensurate with the climate and pollution urgency we face.

In particular, we must object to any continued funding for plug-in hybrids (PHEVs), which, compared to BEVs, still contribute to climate and air pollution. According to the Funding Plan, "The primary goal of CVRP is to accelerate the deployment of the cleanest feasible vehicle technologies to meet California's air quality, climate change, and petroleum reduction goals."[1] As evidenced by the popularity of BEVs and recent announcements[2] by some OEMs to stop producing hybrids, we are quickly moving past the era of the PHEVs towards BEVs. There is no doubt that a BEV is the "cleanest feasible vehicle" technology today.

In fact, as demonstrated by CARB's own analysis, only 4-10% of annual VMTs of some of the most popular (short-range) PHEVs operate emissions-free.[3] Another California study found that PHEVs with 20 miles of electric range only travelled on electricity 25% of the time; 15-30% of PHEV owners

[1] 2019-20 Funding Plan for Clean Transportation Incentives, pg. 34.
[2] "GM, Volkswagen Say Goodbye to Hybrid Vehicles" https://www.wsj.com/articles/gm-volkswagen-say-goodbye-to-hybrid-vehicles-11565602200
[3] CARB, 2017. California's Advanced Clean Cars Mid Term Review. Pg. ES-36.

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never plug in their PHEVs.[4] A recent review in the E.U. found that non-plug-in hybrids offer better and more certain emissions reductions than PHEVs due, in part, to inconsistent charging behavior.[5]

Despite the fact that staff proposes to raise the all-electric range (AER) of CVRP-eligible PHEVs from 20 to 25, this marginal increase continues to reward OEMs unwilling to appropriately invest in long-range PHEVs or BEVs. If the board is unwilling to remove PHEVs from CVRP, we urge it to raise the AER to at least 40. This is consistent with the findings in Hardman et. al., 2019 ("Short-range PHEVs should receive less policy support than long-range PHEVs") and with legislation (AB 126) the CA Assembly passed overwhelmingly this year (75-0).

In fairness, staff has acknowledged that AER should continually be increased and proposes to phase out PHEVs given advances in technology and range for the broader consumer market "in [a] few years".[6] We respectfully request that that this should occur in this current funding cycle.

We also question why staff relies on an AER metric—UDDS—that does not reflect real-world driving conditions. For example, we understand the Prius Prime has a UDDS AER of 38 compared to a U.S. EPA range of 25.

Finally, we respectfully request that the board treat all ZEV technologies equally. Imposing a MSRP cap of $60K will eliminate two of three Tesla models from CVRP, yet staff proposes to exempt fuel-cells (FCEVs) from this cap because "…this technology is still in the early phases of deployment". After about 30 years of some form of public subsidy or support, we question when fuel cells will reach an acceptable level of deployment that will convince CARB to, at the very least, treat it on equal footing. 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 on CA roads today– compare this with about $2,351 per BEV.[7]

<u>HVIP</u>

Tesla appreciates staff's hard work to develop creative changes to HVIP that will keep the program both effective and solvent as demand grows but funding remains flat. While incentives can help accelerate clean vehicle adoption, stable funding for those incentives is also important. As the Funding Plan reports, HVIP's 2019 funds were exhausted about half of the way through the year – on July 23, 2019[8] – so changes are clearly needed to keep HVIP an easy-to-access market driver. Thus, Tesla generally supports many of the funding-related changes proposed in the Funding Plan including the removal of various "plus-ups" to incentives, the graduation of low NOx engines and hybrids from the program, as well as clarification on incentives "stacking" with other public funds.

Further, Tesla supports staff's continued investigation into whether the voucher amounts should be

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[4] Hardman, Plotz, Tal et. al., 2019. "Exploring the Role of Plug-In Hybrid Electric Vehicles in Electrifying Passenger. International EV Policy Council, UC Davis.
Transportation"

[5] Emissions Analytics, 2019. "Plug-in hybrids without behavioural compliance risk failure" https://mailchi.mp/emissionsanalytics/lifecycleassessment-1009133

[6] 2019-20 Funding Plan for Clean Transportation Incentives, App C, pg. C-28.

[7] 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.

[8] Ibid, pg. 92.

reduced across the board. Technology costs have been dropping steadily over the last several years so CARB should commensurately refine HVIP's incentive amounts to help maximize the number of vehicles deployed with its limited pool of funds. Tesla looks forward to continue work with CARB on refinements to the HVIP program.

Thank you for considering our comments. Please contact me at dchia@tesla.com for any questions.

Sincerely,

Dan Chia
Senior Manager