November 8, 2021
Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Proposed 2021-22 Clean Transportation Incentives Funding Plan

Chair Randolph and Members of the Board:

Tesla appreciates the opportunity to provide feedback on the proposed 2021-22 Clean Transportation Incentives Funding Plan. Overall, Tesla supports the funding allocation proposed in the plan, which appropriately prioritizes funding to those programs that have the greatest chance of being transformational and driving large emission reductions both in the near and longer term.   As with prior years' funding plans, Tesla strongly supports the significant allocation of funds to support the Hybrid and Zero Emission Truck and Bus Voucher Incentive Program (HVIP). This program plays an important role in driving adoption of zero-emission heavy duty vehicles, which contribute disproportionately to transportation sector emissions as well as to the pollution burden born by disadvantaged communities. Funding of HVIP will also continue to advance the goals articulated in Executive Order N-79-20, which calls for "100% of all medium- and heavy-duty vehicles in the state to be zero emission by 2045 for all operations where feasible and by 2035 for drayage trucks", the Advanced Clean Truck Regulation, as well as the Advanced Clean Fleets regulation, currently under development.

As in all things policy-related, however, the devil is in the details and while Tesla is broadly supportive of the investment plan, we have a number of recommended changes that we hope the Board will consider, specifically related to HVIP:

- Restructure the incentives to support greater program sustainability,
- Eliminate the fuel cell multiplier/adder, and
- Maintain eligibility for larger fleets to receive HVIP incentives provided the vehicle being purchased is in excess of any compliance obligation

HVIP Recommendations

Restructure the incentives to support greater program sustainability.

Consistent with our recommendations regarding the 2021-2022 Investment Plan, Tesla encourages ARB to reduce the level of the incentives HVIP provides per vehicle.[1] Demand

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[1] Tesla comments regarding the 2020-21 Clean Transportation Incentives Funding Plan, submitted December 7, 2020, p. 2

for HVIP funds continues to dramatically outstrip the available budget. Based on the level of demand for vouchers HVIP has seen over the past several years, it continues to be the case that the program will remain significantly oversubscribed. The most recent tranche of funding that was made available on October 28, 2021, in the amount of $63 million, was fully subscribed in under fifteen minutes. This is problematic as it raises serious questions regarding whether HVIP is providing incentives that are higher than they need to be to drive adoption of medium and heavy-duty ZEVs, and thus resulting in the program having less impact than it could were the incentives reduced, thereby allowing the money to be stretched further to support the deployment of more vehicles. From the perspective of a manufacturer with customers that would utilize HVIP funds to support incremental purchases, Tesla believes the rapid depletion of funds has essentially turned HVIP into a lottery on which customers simply cannot rely. This undermines its effectiveness in driving investment decisions since the expected value that any entities seeking to utilize the incentive can ascribe to it is effectively zero.

While staff has taken some steps that might moderate draws on the funding, thus far those changes have not included any meaningful reductions in the per vehicle incentive levels offered by the program and will thus do little to curb the excess demands the program has experienced and address the fundamental challenge that HVIP faces. Furthermore, as discussed below, Tesla views at least one of the changes that has been proposed, to categorically prohibit fleets of a certain size or greater from being able to access funds, as problematic. Below Tesla presents, in order of relative sophistication, various reforms that each provide a different means of better calibrating the level of incentive offered and, in so doing, expanding the number of vehicles the program can support and targeting funds in a way that more effectively advances the program's goals.

Tesla further notes that should ARB adopt any of these proposals, it should also consider raising or eliminating the per fleet voucher caps. We understand these were implemented as a way to enhance allocational equity across different purchasers as well as to moderate demand on the program, both of which we believe may be sufficiently addressed through the adoption of our proposed reforms, potentially rendering the voucher caps unnecessary.

Option 1: Reduce the value of HVIP vouchers by a fixed factor.

A straightforward approach to addressing the oversubscription challenges the program faces would be to simply cut the current incentive amounts by some fixed factor, e.g. reducing them by 25-50% from their current base levels shown in Table 1 of the draft funding plan. Tesla believes these adjusted base level amounts would continue to be sufficient to drive demand while forcing a greater level of price competition among manufacturers. Not only would this act as a forcing function that pushes manufacturers to focus their efforts on bringing the costs down of eligible vehicles, it would also dramatically increase the number of vehicles that the program can support, and by extension, the emission reductions the program achieves.

Option 2: Calculate per vehicle incentive amounts based on all electric range or battery size.

Rather than offering incentives on a per vehicle basis, ARB could modify the incentive to provide them on a per-mile-of-all-electric-range basis or a proxy thereof. To its credit, the CVRP program will consider such an approach in future funding plans.[2] The current incentive structure is incredibly blunt in its approach in that it offers a single unitary incentive for any eligible vehicle within a given weight class. For example, a Class 8 truck that travels less than 150 miles per day would, under the current program design, receive the same incentive as a Class 8 truck that travels 300 or more miles per day. Given that the key driver of any cost differences between these vehicles is the size of the battery pack, it makes no sense that these vehicles are eligible for the same incentive amounts. This also means that lower range vehicles are effectively receiving more per unit of emissions reductions with no discernible reason to justify such a disparity. A more reasonable alternative to the current approach would involve offering incentives on a dollar-per-mile-of-all-electric-range or on a dollar-per-kWh-of-on-board-battery-capacity (or equivalent thereof for fuel cell vehicles) basis. As with the current incentive structure, the base level incentive would continue to increase as a function of vehicle weight, recognizing that larger vehicles inherently require more energy and therefore battery capacity per mile of range. This approach would serve to more effectively calibrate the level of the incentive to better reflect the underlying driver of the higher costs that ZEVs typically have compared to conventional vehicles, while also ensuring that differences between vehicles within and across different weight segments are appropriately recognized in the incentive amounts provided.

Option 3: Allocate incentives based on which applicants demand the least funding per ton of avoided CO2 emissions.

The current incentive program substantially relies on ARB's cost assessment to set incentive levels, which are meant to largely, if not fully, offset the incremental costs that entities procuring ZEVs in lieu of conventional vehicles are likely to face. However, in the face of a rapidly changing market, the dramatic increase in demand for funds, and recognizing the huge diversity of vehicles representing highly varied duty cycles that are eligible to participate, we believe that in many cases, the amount that ARB is offering is higher than necessary to support market demand. As already noted, the speed with which funds are being subscribed indicates that the current incentive levels have been set too high. As a result, demand has far outstripped the supply of funds.

In instances like this, where there is a scarce resource that need to be allocated, there is an opportunity to utilize an alternative approach to ensure the scarce resource is allocated as efficiently as possible. Specifically, rather than ARB attempting to determine the relative cost of ZEVs compared to ICE vehicles to set a generic incentive level, the program could be restructured as an auction, where funds are allocated based on which entities are procuring vehicles that require the least amount of HVIP funding per ton of avoided CO2 emissions.

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[2] Proposed 2021-22 Clean Transportation Funding Plan, Appendix C, pg. C-13.

Under this framework, ARB would provide a defined window during which applicants for funds would submit a request that indicates the type and number of HVIP-qualifying vehicles they intend to purchase, where those vehicles will be operating, and how much HVIP funding they need in order for them to be willing to move forward with that transaction. ARB could then use this information to calculate the HVIP dollars per ton of avoided CO_2 emissions that each applicant is requesting based on the type of vehicle that is being deployed and reasonable assumptions about the emissions profile of the conventional vehicle that would otherwise be purchased. Once this is calculated, ARB could rank order the applications from lowest to highest based on this metric and allocate funds accordingly, first funding the application that is requesting the least amount of HVIP funds per ton of avoided CO_2 emissions, then funding the project that is requesting the second least amount of funds per ton of avoided CO_2 emissions, etc.

To ensure this approach doesn't result in wildly overpriced projects from receiving funds and perpetuating some of the current problems Tesla observes with the program, Tesla recommends that ARB establish a cap on the maximum amount it is willing to pay via HVIP per ton of avoided emissions. In other words, funding would only be available to projects that have an estimated avoided emissions cost that is at or below this cap. This proposed cap could be reasonably based on ARB's vehicle cost assumptions that currently serve as the basis for the incentives offered under the program and an assumed duty cycle and vehicle life. As Tesla has expressed before, we view ARB's current cost estimates as high and thus they would serve as an upper bound for what HVIP can reasonably support. To the degree this approach results in HVIP funding dollars being left unsubscribed, ARB could open subsequent bid windows until all funding has been allocated.

While this approach doesn't entirely take ARB out of the role of trying to establish generic vehicle cost and price estimates, which is an inherently fraught exercise, it does reduce the role those estimates play in determining the incentives that individual projects would receive, instead letting market competition largely drive those determinations. Program applicants would have a strong incentive to submit as low a "bid" as possible to increase their odds of actually getting an incentive in the face of the tremendous demand the program is seeing, in turn ensuring that the program only provides funding to the level that is needed to facilitate the ZEV purchase. This would also provide ARB with much greater insight into the level of incentives needed to actually catalyze purchases, helping to address some of the critiques the California State Auditor recently expressed regarding CARB's incentive programs.[3] Similarly, by expressly allocating funds to those vehicles that offer the greatest "bang for the buck" in terms of avoided CO_2 emissions, this approach would also help address concerns the State Auditor raised regarding the impacts programs like HVIP have on emissions reductions.

Tesla recognizes that ARB has historically included certain policy preferences intended to drive adoption in priority areas or market segments (e.g., disadvantaged communities). Not unlike the current framework, the auction-based approach described above could

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[3] "California Air Resources Board – Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals", Auditor of the State of California, February 2021. http://auditor.ca.gov/pdfs/reports/2020-114.pdf

incorporate such preferences and priorities by applying multipliers to the avoided emissions used to calculate the HVIP dollars per ton of avoided CO_2 emissions. For example, if a 200% multiplier were ascribed to vehicles being deploying in disadvantaged communities, that would result in a halving of the HVIP dollars being requested per ton of adjusted avoided CO_2 emissions, improving the position of these applicants in the rank order used to allocate incentives. To the degree DACs, by definition, are more vulnerable to the adverse consequence of pollution and bear a disproportionate share of those impacts, the use of such multipliers seems reasonable. Tesla submits that this approach would be far more effective than the current framework in supporting projects in DACs since it would increase the chances of these projects receiving funding by allowing them to place higher in the bid stack used to allocate funds. In contrast, as implemented under the current program, the multiplier only helps to the degree a vehicle to be deployed in a DAC is actually able to secure funding at all, which the existence of the multiplier doesn't, in of itself, influence.

An auction-based framework could, conceivably, pose some disadvantage to smaller fleets to the degree larger fleets may command greater discounts from manufacturers for volume purchases. To address this ARB could, similar to what we propose for DACs, apply some kind of adjustment factor to the assumed emissions benefits of vehicles deployed in smaller fleets to offset these scale benefits. In the alternative, this concern could also be addressed by simply setting aside some incentive funds for the exclusive use of smaller fleets. Smaller fleets would not be precluded from applying for HVIP monies outside of this set-aside but would be given exclusive access to those funds, thereby ensuring that some share of HVIP dollars is dedicated to support their efforts to transition to ZEVs.

Eliminate the Fuel Cell Modifier.

Tesla recommends the modifier that currently applies to fuel cell vehicles (FCVs) be eliminated in its entirety. We made this same request in our comments on last year's funding plan and incorporate those comments here by reference.[4] The bottom line is that by offering substantially higher incentives for FCVs, ARB is inappropriately placing its thumb on the scale in favor of fuel cell technologies, despite the fact that the relative benefits offered by fuel cell vehicles, in terms of emission reduction potential and commercial viability, have not been explained or demonstrated. This policy also contributes to the fundamental issue facing HVIP, namely the rapid depletion of funds, which undermines its efficacy in driving investment decisions. Offering double the amount of funding for FCVs make even less sense given the funding pressure HVIP is under.

Vehicles purchased in excess of any regulatory obligation should continue to be eligible for HVIP vouchers.

The Funding Plan proposes to establish fleet size thresholds that would determine whether a ZEV purchase by the fleet operator is eligible for HVIP funds. Specifically, staff suggests that beginning on January 1, 2023, private fleets with more than a total of 100 trucks and

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[4] Tesla comments regarding the 2020-21 Clean Transportation Incentives Funding Plan, submitted December 7, 2020, pp. 4-5.

buses no longer be eligible for HVIP incentives. Further, this limit would be reduced to 50 trucks and buses beginning on January 1, 2024.[5] Tesla disagrees with this policy recommendation. Instead, Tesla recommends that ARB hew to its long-standing practice of prohibiting vehicles that are procured pursuant to a regulatory mandate from being eligible for incentives. Although what form the Advanced Clean Fleet (ACF) regulations will ultimately take remains to be seen, as currently conceived, some fleets comprised of 50 or more vehicles will begin to face a purchase obligation beginning in 2024. However, some vehicle types would not face any compliance obligation until much later (e.g., sleeper cab tractors and specialty vehicles deployed in fleets that fall under the High Priority and Federal Fleets portion of the ACF do not have a compliance obligation until 2030). Under ARB's long-standing practice, any vehicles that are purchased to meet an ACF compliance obligation would not be eligible for HVIP incentives. However, if a fleet owner/operator is purchasing a vehicle that would result in it exceeding its compliance obligation under the ACF then that vehicle should be eligible for HVIP incentives, provided all other eligibility criteria are met. Because the ACF, as currently drafted, applies to fleets of 50 or more vehicles, to the extent a fleet has a compliance obligation, Tesla's proposed approach is not dissimilar from what staff has proposed, but is more nuanced in that it would continue to leverage HVIP to support early and more aggressive action by fleet operators as they transition their fleets to ZEVs, regardless of fleet size.

Tesla appreciates that smaller fleet operators face greater financial and other obstacles relative to large fleet operators when it comes to investing in ZEVs. To that end, in addition to Tesla's proposal above, we would also support reducing the incentive that larger fleet operators have access to. This could be accomplished under the current structure by establishing a large fleet modifier that would reduce the base incentive by some fixed factor (e.g., apply a .5 multiplier) for any HVIP-eligible vehicle being purchased by a larger fleet. Variations of this could include successively greater incentive discounts for fleets of different scales (e.g. no multiplier applied for fleets of 25 vehicles or less, a .75 multiplier for fleets with 26 to 100 vehicles, and a .5 multiplier for fleets greater than 100 vehicles.[6] This would also be consistent with our general recommendation to reduce the per vehicle incentives offered under the program. In fact, this might offer a reasonable middle ground for ARB's consideration, whereby the incentives available to smaller fleet operators remain at the currently proposed levels, but those available to larger fleet operators would be discounted based on the fixed factor described herein.

Conclusion

Tesla appreciates the opportunity to submit these comments on the 2021-22 Clean Transportation Incentive Funding Plan. As ARB implements regulations like the Advanced Clean Truck and the Advanced Clean Fleets rules, the role of programs like HVIP in priming

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[5] Proposed Fiscal Year 2021-22 Funding Plan for Clean Transportation Incentives, pg. 111
[6] Under our second proposal for reforming the incentive design, where payments would be provided on a dollar per mile of all-electric range or per kWh of battery capacity, a similar factor could be applied, either to discount the base incentive available for larger fleets, or to scale up the base incentive for smaller fleets. This type of adjustment wouldn't be necessary under our third proposal under which funds are allocated based on competitive bids to the degree, provided funds are available, funding is, in effect, calibrated to the specific needs of the applicant given the costs they face.

the market are of increased importance. As such, it is critical for ARB to take appropriate steps to maximize the value it gets from these programs. The reforms Tesla has proposed herein would dramatically improve the efficacy of the program by effectively calibrating the incentive to the needs of the market and to the underlying benefits that participating vehicles provide.

Thank you for your consideration.

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