BYD America
1800 S Figueroa St.
Los Angeles, CA 90015

December 16, 2016

California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Re: Comments to Appendix C of the Volkswagen Partial Consent Decree

Dear Chair Nichols and Members of the Air Resources Board:

BYD America ("BYD") appreciates the opportunity to comment on the ARB's guiding principles for the Volkswagen California Zero-Emission Investment Plan ("Appendix C").

I. Introduction

BYD is a global manufacturer of zero-emission light-duty and heavy-duty battery electric vehicles. With its North American offices headquartered in Los Angeles, CA and multiple manufacturing facilities in Lancaster, CA, BYD seeks to support policy agendas that squarely address climate change and its associated dangers.

This settlement represents a remarkable opportunity to catalyze transformative changes in California's zero-emission vehicle (ZEV) market. Although the settlement includes a substantial amount of funding, the resources are still finite. *It is critical that funding decisions be made with the mindset of achieving maximum emissions reductions per dollar spent*. With that in mind, BYD offers the following comments on priorities for Appendix C.

II. ZEV Investment Plan

Focus on Heavy-Duty Vehicles

BYD supports the overarching ZEV strategy laid out in Appendix C. The funds will go a long way toward increasing ZEV infrastructure, education and access. That said, the guiding principles should make supporting heavy-duty ZEV projects a priority in order to maximize the efficacy of each dollar spent.

Although fossil fuel heavy-duty vehicles represent only 7% of all vehicles in California, they emit 40% of the state's particulate matter and are the state's single largest source of

NOx emissions[1]. These emission sources must be mitigated. Large-scale deployments of heavy-duty zero-emission vehicles will result in significant economic, environmental and health benefits. This is especially true in California's most disadvantaged communities, which bear the brunt of greenhouse gas and criteria air pollutant emissions from conventionally fueled heavy-duty vehicles. One study found that meeting federal ozone and particulate matter standards in the South Coast air basin, where many vulnerable communities are located, would result in health benefits valued at over $21 billion dollars[2]. Given California's national prominence in the clean transportation space, it is critical that these projects receive priority and be implemented in order to provide a blueprint that can be emulated by other regions throughout the country.

Further, Volkswagon does not have a presence in the heavy-duty electric vehicle space in America, thereby ensuring that no conflicts of interest exist in the disbursement of these funds. The money will simply be directed to the ZEVs that produce the most significant NOx reductions per vehicle.

Flexibility for Heavy-Duty Infrastructure

In the short- to medium-term, eligibility requirements for heavy-duty infrastructure funding should be flexible. Section 3 of the ZEV Investment Plan requires any proposed charging infrastructure to have the ability to service all plug-in ZEVs with non-proprietary connectors. While this requirement makes sense in the light-duty ZEV context, where standards for charging equipment have been in place for some time, it makes far less sense for heavy-duty ZEVs. Charging standards for heavy-duty ZEVs are still evolving and each original equipment manufacturer (OEM) utilizes a proprietary charging solution for its vehicles. These solutions vary significantly on several levels, from the shape of the connector to the output power coming out of the cable. For example, one OEM's charger will take in AC power from the grid and convert that power to DC on the vehicle, while another OEM will convert that power to DC in the charger, and charge the bus using DC power. Further, some OEMs offer high power overhead catenary charging systems, while others prefer simple depot plug in solutions.

These fundamental technical differences make it extraordinarily difficult to accommodate multiple charger types on one heavy-duty charging station. The addition of a different connector type to a charging station would not allow vehicles from different heavy-duty ZEV OEMs to be able to charge from that station. Given these technical realities, *the ZEV Investment Plan should allow for the installation of proprietary chargers, at least for the first 30-month portion of the Plan*. As the industry at large moves toward a plug-in charging standard, future 30-month segments will be able to integrate it. There are currently several active SAE committees that are developing standards for heavy-duty

---

[1] http://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf, page 1

[2] Victor Brajer, Jane V. Hall, and Frederick W. Lurmann. Valuing Health Effects: The Case of Ozone and Fine Particles in Southern California. *Contemporary Economic Policy*, 29 (4), 524-535.

charging, but these efforts will take time and we cannot afford to go slow when it comes to air quality and climate change.

Green City Initiative

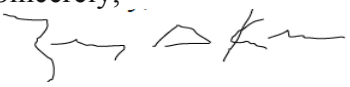
BYD supports the priorities staff outlined for the Green City project element of Appendix C. The Green City initiative represents a unique opportunity to build and showcase the future of clean transportation by quickly deploying ZEV technologies across multiple sectors in a concerted manner. BYD urges ARB to ensure that freight and transit applications are given top priority with respect to planning a Green City, as they represent the most cost-efficient method of reducing emissions. The planning process should include intelligent siting of charging infrastructure and the upgrading of electrical distribution infrastructure to support the influx of ZEV vehicles. It is important to note that beyond the reduction of GHGs, disadvantaged communities within the selected city stand to benefit significantly from a focus on deploying heavy-duty ZEVs and the associated reduction in criteria air pollutant emissions.

BYD also recommends that the Green City initiative follow the tremendous example set by the US Department of Transportation's Smart City Competition and create a competition wherein cities throughout California can develop and submit proposals that undergo a transparent review and selection process. This competition will push cities to coordinate local agencies, leaders, and businesses to put together a comprehensive plan of action. The cities that do not emerge victorious will nonetheless retain a plan of action that can be utilized going forward. They will have also used the opportunity to galvanize support for these initiatives with their community stakeholders. Getting this "buy-in" will significantly increase the chances that these ideas move forward with or without the funding from the settlement.

III. Conclusion

The Appendix C investments have the potential to usher in transformative changes for many of California's communities. It is critical that the funding is invested with an eye toward maximum impact on emissions. BYD appreciates the opportunity to make these comments and the thoughtful consideration of ARB.

Sincerely,



Zach Kahn
Director of Government Relations
BYD America