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*Comment Received From: Tom McDonald
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WAVE comments on ZIP

Additional submitted attachment is included below.

February 4, 2022

Mark Wenzel, Ph.D.
California Energy
Commission
715 P Street
Sacramento, CA
95814

Re: WAVE Comments on the Zero-emission Vehicle Infrastructure Plan (ZIP)

Dear Dr. Wenzel:

WAVE (Wireless Advanced Vehicle Electrification) appreciates the opportunity to comment on the January 20, 2022 workshop and outline related to developing the Zero-emission Vehicle Infrastructure Plan (ZIP).

Aaron Gillmore
CEO, WAVE

Heavy-duty vehicles use up to 10 times more power than passenger vehicles, and the challenges associated with using manual plug-in chargers scale accordingly. We encourage the California Energy Commission (CEC) to highlight hands-free, wireless, inductive electric vehicle charging as a promising emerging technology and effective strategy to address common barriers to electric vehicle charging. The technology has been used by transit agencies across the U.S. since 2016, including the Antelope Valley Transit Authority (AVTA) in Northern Los Angeles County - the largest operating battery-electric bus fleet in the United States.

Moving forward, we encourage the CEC to establish an even playing field for wireless and plug-in charging, to require charging technologies to be interoperable across vehicle platforms, and to align with emerging standards, such as a heavy-duty inductive charging standard under development by the Society of Automotive Engineers (SAE).

At higher power levels, especially those needed to charge heavy-duty trucks, the weight and heat of larger plug-in cables become unmanageable. Inductive chargers are embedded in the roadway or depot pavement. High power is automatically delivered to a fleet's MHD vehicles during regularly scheduled stops of any time length. The charging process is quick, hands-free, and safe. Free of overhead charging gear, ground clutter, and heavy cables, wireless charging reduces many of the challenges of deploying MHD charging infrastructure at scale. It provides a more convenient, durable, and reliable charging solution, along with easy in-route charging access to help extend the range of electric transit buses and other heavy-duty ZEVs.

We believe that high-power, hands-free wireless inductive charging will be critical to accelerating the elimination of harmful diesel emissions due to improved operational efficiencies. As such, WAVE encourages the CEC to highlight in the ZIP wireless inductive charging as a promising emerging technology to support MHD electrification that overcomes many of the barriers we expect you may identify in the report. We hope you will propose recommendations to advance this important technology, as well.

One of those recommendations should be to reward and encourage high utilization of heavy-duty ZEV infrastructure. This may include rewards or multipliers under potential capacity crediting schemes for MHD ZEV infrastructure in the Low Carbon Fuel Standard, in order to avoid windfall revenues to hydrogen station developers or electric vehicle charging providers for poorly utilized infrastructure.

We also encourage you to take steps to ensure interoperability across vehicle models/makes and ZEV infrastructure. This will help to ensure that any plug-in vehicle can use any plug-in charger, and any wirelessly charged vehicle can use any wireless charger. CEC should support standards adoption by internationally recognized expert bodies such as the Society of Automotive Engineers, which is currently developing standards for heavy-duty wireless charging. The CEC should also require interoperability and alignment with standards as a condition of receiving public incentives, and consider eventually aligning around a common set of charging standards in regulation, as CARB is considering right now for light-duty vehicles in its Advanced Clean Cars II rulemaking.

Thank you for the opportunity to comment. Please let us know if you have any questions regarding these thoughts.

Sincerely,



Aaron Gillmore

CEO, WAVE