**Faraday Future’s Comments on a Beneficiary Mitigation Plan for California’s Allocation of the Volkswagen Environmental Mitigation Trust**

Faraday Future is a California corporation with headquarters in Los Angeles. We are manufacturing our first production all-electric car, the FF91, in Hanford, California. We request that the Air Resources Board allocate the maximum amount of $63 million allowed under Appendix D of the Volkswagen Settlement, to further build out charging networks for light duty electric vehicles. In particular, we advocate spending Appendix D funding on ultra-high power charging stations and infrastructure.

The replacement of internal combustion engine vehicles (ICEs) with electric vehicles (EVs) is one of the most effective tools available to ARB to mitigate Nitrogen Oxide (NOx) emissions. Using data from EPA’s eGRID and Argonne’s GREET databases, we can estimate the environmental effects of consumers choosing to acquire an EV instead of an ICE. For example, in the areas in California where we are requesting EV charging stations, the NOx/mi emissions would be 243.481 mg/mi for a Chevy Cruze, but only 30.772 mg/mi for a Chevy Bolt. That is an 87% reduction if a consumer chooses to drive an EV. Similar reductions in NOx emissions would result if consumers choose other EV models over comparable ICEs. See the Fleet Procurement Analysis Tool at <http://atlaspolicy.com/rand/fleet-procurement-analysis-tool/>.

However, range anxiety is a well-known impediment to consumers purchasing EVs. In order to convince the public to accept EVs as their preferred option for transportation, California has to make refueling EVs as convenient as it is now with gasoline. That requires more public charging stations all around the State, and it requires that the stations have direct current (DC) fast charging that makes the time needed to charge comparable to the time required to refuel an ICE at a gas station.

With auto manufacturers rolling out EVs with larger battery packs, the existing DC fast charging stations will be too slow to satisfy the public. For instance, with today’s standard fast charger at 50kW it takes over an hour to charge a 60kWh battery like that in the Bolt. This is not fast charging. And many automakers, such as Faraday Future, are planning to roll out battery packs of more than 100kWh.

In order to bring to the California public a comparable experience to filling their tanks at gas stations, ARB should use Appendix D to fund the deployment of “ultra-high power charging stations.” By that we mean DC fast charging stations providing at least 150kW with a minimum charge current of 400 amps. We also suggest that the charging station sites be future proofed for even higher power stations of 350kW or higher.  Higher-power DC fast charging stations are currently under development by several manufacturers, and when they are available on the market the charging station sites should allow for upgrade to these higher power stations.

Encountering broken or otherwise “offline” charging stations will lead to range anxiety, and waiting in line to charge contributes to consumer frustration. To avoid those outcomes, we further recommend a minimum of two (2) Combined Charging Standard (CCS) connectors at each site with the ability to expand for future demand later.

We suggest the I-5 and I-99 corridors, including Hanford and the Bakersfield and Fresno areas, as good locations for adding ultra-high power charging stations.  Putting more high-power fast charging stations on both the I-5 and the I-99 will create a pathway to drive electric from the Sacramento/San Francisco Bay Area to the Los Angeles area. This will not only make it easier to drive from Sacramento to Los Angeles, it will also support many of the underserved communities along the way.  The City Manager of Hanford testified at the recent workshop in support of this request for an ultra-high power charging station, and the City of Hanford will work with ARB in locating a suitable site. Potential areas we suggest in addition to Hanford are: Stockton, Merced, Modesto, Manteca, Los Banos, Kettleman City, Bakersfield, and San Fernando. These recommendations are by no means all-inclusive and other areas within the State would also be suitable locations for ultra-high power charging stations.

If you have any questions or if we can provide any further information, please feel free to contact Kevin Vincent, Director of Regulatory and Safety Affairs, kevin.vincent@ff.com, 424.295.2555.

Thank you for giving Faraday Future the opportunity to present our recommendations and for the opportunity to appear at the workshop earlier this month.