



**California Air Resources Board Workshop
Workshop on Volkswagen Settlement**

**Comments Submitted by
EVgo Services, LCC**

December 16, 2016

Thank you Chairman Nichols and the Air Resources Board for the opportunity to provide written comments following the first California ZEV Investment workshop held on December 2, 2016.

EVgo is the nation's largest—and California's largest—provider of public fast charging services for electric vehicles (EVs). Our stations are open to all vehicles, with charging connectors that support both dominant standards—CHAdeMO and CCS—and also allow Tesla drivers to connect and charge at EVgo stations with an adaptor. We own and operate our charging infrastructure and provide services directly to drivers, both in partnership with automakers and with individual drivers through subscription and walk up services. This unique business model puts EVgo squarely in the mix with consumers as direct customers, retail properties as host partners, and automakers as financial and strategic partners in delivering affordable, reliable, and accessible fast charging to EV drivers. When we say we put our customers first, we mean all of those stakeholders integral to the deployment of today's EVs as well as the next generation of vehicles.

We commend the Air Resources Board, the California Public Utility Commission, the Governor's office, legislature, and other California stakeholders for their work in advancing EV deployment in the state and hope to build on the great work that has been done with them, the EPA, other states, automakers, and equipment manufacturers to leverage the opportunity presented by the Volkswagen investment to accelerate EV deployment across the country. The EV charging industry currently faces three major infrastructure challenges as we pursue the path to mass

adoption, and the Volkswagen investment presents a unique opportunity to enable the industry to attack all three.

1. First, operating costs are substantial and often uncorrelated to utilization because of utility demand charges, which today reach up to 80% of operating costs. We need a committed entity to support those early costs and we need to work together as an industry to improve the cost structure for long-term fiscal sustainability through solutions including EV charging tariff reform, alternative energy procurement options, and low carbon fuel credits.
2. Second, **High Speed Charging** is the future. Battery capabilities are improving in range, density, and cost, and while this welcome improvement increases driving range, it also increases charging time. For example today's LEAF charges near full in 30 minutes. The new Chevy Bolt requires one hour to charge near full on a 50kW fast-charger. The next Tesla, Audi, BMW and others could take even longer to charge. Therefore charging rates will need to increase just to maintain charge time. EVgo has led the way in deploying 50kW fast chargers, a massive improvement and reduction in charging time compared to level 2 (L2) charging. To make the jump to 100kW, 150kW, and eventually 300kW+ chargers that get EV drivers on their way in 10-20 minutes, the industry will need access to more capital and electricity. If past fast charger installations can be a guide, this could require as much as \$1 million per site. California currently has over 300 fast charging stations. Merely upgrading those existing chargers to higher speeds therefore could cost roughly \$300 million before looking at new installations.
3. Third, **multi-family residents** need better access to charging. While EVgo has focused a large portion of our activity under the CPUC settlement to tackling this challenge, more work is needed and the reality remains that many or most multifamily residents in California do not have a dedicated overnight parking space that could support their own charger. Many are parking on the street with no ability for dedicated charging, and these properties correlate with lower rent prices. In order to reach these residents and make EV ownership a reality for Californians across income levels and geographies, ***even more high speed public charging is needed***. If that goal requires doubling the number of sites, then at \$1 million per, we are now looking at \$600 million.

The Volkswagen investment will be a significant down payment on the investment required to make ubiquitous EV deployments a reality. The EV charging industry is a strong and growing set of companies that stands ready and able to execute on the needs of Volkswagen as they look to deploy settlement resources quickly, efficiently, and responsibly to overcome infrastructure barriers to EV adoption.

Therefore, EVgo strongly supports the infrastructure spending required by the settlement and urges the parties to resist the temptation to spread the Volkswagen investment too thinly by funding every one of the multitude of ideas and interests of our stakeholder community. Also, please continue to **advance strategies and co-investments** alongside these funds. As we do, more private investment will leverage these dollars for California.

Additionally, EVgo encourages the use of the investment in Appendix C for EV charging only, **not for hydrogen fueling**. While both electric and hydrogen fuel cell vehicles are low-emission light duty transportation technologies, research shows that fuel cell vehicles carry higher overall costs, primarily due to hydrogen generation infrastructure.¹ Further, there are currently over seven times more fully-electric vehicles (fifteen) eligible for the California Clean Vehicle Rebate Project (CVRP) than hydrogen fuel cell vehicles (two), with many more long-range and affordable EV models planned for release by all major automakers in the coming years.²

By this same token, EVgo encourages the full use of the 15% light-duty infrastructure allowance in Appendix D, the Environmental Mitigation Trust Agreement, for EV charging. The remaining 85% of Mitigation Trust funds are the most appropriate source of funding for ancillary NOx emissions reductions programs that are related neither the subject of the settlement nor Volkswagen's business interests, including engine replacements in large trucks, school buses, heavy equipment, forklifts, marine engines, and stationary diesel engines.

California and the US should also get **tangible and durable assets** from Volkswagen's investment. Spending significant funds on non-specific, non-branded marketing outreach dilutes

¹ Markus F. Felgenhauer, Matthew A. Pellow, Sally M. Benson, Thomas Hamacher, Evaluating co-benefits of battery and fuel cell vehicles in a community in California, *Energy*, Volume 114, 1 November 2016, Pages 360-368, ISSN 0360-5442, <http://dx.doi.org/10.1016/j.energy.2016.08.014>.

² Center for Sustainable Energy. (2016). California Clean Vehicle Rebate Project. Retrieved from <https://cleanvehiclerebate.org/eng/eligible-vehicles>

the funding unnecessarily. While marketing is helpful, the biggest impact comes from seeing electric vehicles in your community being driven—and charged—by your neighbors and coworkers. Deploying and maintaining public fast chargers to put more consumers in EVs is the best way to raise EV awareness and make consumers knowledgeable about fantastic vehicle options that are not only fun to drive but better for the environment.

EVgo's experience in building and operating public fast charging and other primary charging services in workplace and multifamily buildings has given us some insight that we think reinforces the fact that existing private sector participants are critical partners in implementing the settlement spend.

1. First, site acquisition has been EVgo's focus in building this market, and **high quality sites are key to success**. Many sites have trouble obtaining the necessary approvals from landlords, tenants, and retailers.
2. Second, chargers break, far more often than one might anticipate. Success requires responsibility and funding for repairs due to vandalism, misuse, accidents, etc. These operating costs are substantial and combined with demand charges, it is necessary to have longterm commitments to see the infrastructure through to success.

Lastly, EVgo reiterates its willingness to collaborate, partner, and transfer knowledge from its experience building the nation's largest public fast charge network to this settlement effort. We encourage CARB to work hard with input/feedback from stakeholders to make sure Volkswagen has the right plan in place with controls that are fair but not overly burdensome. Attracting additional dollars to transform public transportation is the key way to grow our industry and build on the opportunity presented by this investment. We appreciate the opportunity to share our views today and look forward to being a helpful partner to the state and industry as we move toward our shared goal of mass EV adoption in California and across the country.