

**DOCKETED**

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**Support for Microgrid-based charging of battery transit buses**

*Additional submitted attachment is included below.*

# Prospect Silicon Valley Supports LACI and VTA Feedback for Electrified Bus Fleet Charging

Prospect Silicon Valley (ProspectSV) wants to encourage the CEC to consider grant funding opportunities that address the concept of developing electric bus battery charging systems that incorporate second life vehicle battery packs into stationary energy storage systems that are charged by renewable energy systems such as solar panels (“microgrids”). Such systems could provide a number of benefits to transit operators to recharge electric transit buses.

California transit bus operators such as the Santa Clara Valley Transit Authority (VTA) have been mandated by the California Air Resources Board to replace their existing fleets of diesel-powered transit buses with zero emissions buses within the next 20 years. Transit operators are faced with substantial challenges to provide sufficient electric service infrastructure to charge battery electric buses at their bus yards as well as potential electric service operating expenses in the form of demand charges and normal electricity rates.

A microgrid system comprised of solar panels to generate energy and a battery system to store energy located at the bus yards where battery electric buses are recharged would give transit operators the flexibility to schedule electric bus charging at times when demand charges and time-of-use rates are higher, thus reducing costs. The basic concept is to use a solar power generation system to charge the stationary batteries during the daytime. During the day solar generation is at its peak but it’s also the time when buses are the busiest and therefore not available for recharging their batteries. The stored energy can then be used to recharge the electric bus batteries in the evening and nighttime hours.

One of the main cost components of a large microgrid system is the cost of the stationary storage batteries. Second life batteries (batteries that have outlived their usefulness as vehicle batteries, but still retain enough capacity to be effective stationary batteries) could substantially reduce the cost of the microgrid system. There are additional benefits to this approach. Primarily, it addresses the issue of what to do with expended vehicle batteries. Electric buses have huge battery packs (which are already owned by the transit operator) that could be repurposed as they are replaced with new battery packs. Secondly, a large microgrid system could provide ancillary grid services that could provide an additional revenue stream to the transit operators while helping lower the cost of grid stabilization to the independent grid operators.

We are encouraging the CEC to consider grant funding opportunities that address this innovative strategy. We believe that this is a natural follow-on to existing CEC funded projects such as the VTA -VGI project (EPC-16-058) and the AVTA e-bus project (EPC-16-065).

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