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Adopt a Charger feedback on 2019-2020 Investment plan

Additional submitted attachment is included below.

November 28, 2018

California Energy Commission
Docket #18-ALT-01
2019-2020 Investment Plan Update for ARF-VTP

Adopt a Charger, Inc. (AAC) is a 501(c)3 non-profit organization, based in California that has facilitated EV charging installations in 10 states. Our mission is to raise awareness of plug-in electric vehicles (PEV) by broadening EV charging infrastructure. Our unique approach matches a funding source with a high-profile destination like National Parks, State Parks, museums and universities. We solicit funding to install "free to the user" EV charging to encourage communication between the EV curious and actual owners, who have proven to be enthusiastic sales people for the new technology. AAC acknowledges that people need to be able to see cars plugged in to make the connection that these vehicles run on electricity.

AAC specializes in inexpensive, noncomplex, reliable solutions, where drivers simply pull up and plug in. There is no need for membership, RFID card or authorization of payment. Included in the project budget is 3 years' operation and maintenance. Typically, the only cost to the site host is the relatively insignificant cost of the additional electricity. Because these chargers are offered "free of charge" to the driver, we get high utilization and maximum exposure of PEV.

AAC is grateful to have received funding for projects from the CEC ARFVTP program. Most recently the grant to install up to 61 EVSE at 12 California State Parks. Prior to this grant, AAC worked with South Coast AQMD and LADWP to utilize CEC funding at Leo Carrillo State Beach, Malibu Creek State Park, Baldwin Hills Scenic Overlook, The Natural History Museum of LA County, the Getty Center, Getty Villa, LA Zoo, and 3 popular LADOT parking lots. AAC assisted the Golden Gate National Recreation Area with a CEC grant for Stinson Beach and Fort Mason. In addition, we assisted the Mendocino Land Trust with their CEC grant proposal for EV charging at 10 California State Parks. These projects provided insight that should be considered for upcoming solicitations.

The CEC has stated:

*"A **convenient, reliable** network of public electric vehicle charging stations (EVCS) will be critical to continue supporting the expansion of PEV ownership in California and ensure the goals of the ZEV Action Plan and Executive Order B-48-18 are realized".*

"AB 8 introduced the GHG benefit-cost score as a new element into the list of policies and scoring preferences for ARFVTP. It is defined as "…a project's expected or potential greenhouse gas emissions reduction per dollar awarded by the Commission to the project."15 F16 AB 8 also directs the Energy Commission to "give additional preference to funding those projects with higher benefit-cost scores."

The statute also calls for the Energy Commission to "develop and deploy technology and alternative and renewable fuels in the marketplace, without adopting any one preferred fuel or technology." (1)

With these goals in mind, AAC offers the following recommendations to the Investment Plan Update:

1. **Allow for the funding of non-networked EV charging, to keep costs down, increase the number of electric vehicle miles traveled (EVMT), and maximize the GHG benefit-cost score**.

Many key points were raised by the 2017 Rand Study, "Process and Outcome Evaluation of the Alternative and Renewable Fuel and Vehicle Technology Program" that support this viewpoint. According to the study, "*One of the barriers most frequently identified by survey respondents was insufficient consumer awareness." (Page 89), "Charging station deployment sometimes had elements of outreach and awareness….and one could agree that their efforts contributed to raising public awareness simply by making EV support infrastructure" (page 95).* (2)

A fuel related barrier identified by the Rand study was that ***"requirements for networked charging systems drives the cost up almost tenfold****." (page 90)* When charging is too expensive, driver's do not plug in, utilization plummets dramatically decreasing EVMT and GHG reductions. We also miss an important opportunity for outreach and education. The County of Sonoma experienced a decrease of usage by 69% when a fee was introduced. (attachment A) According to industry expert Dave Packard, "*get the cost of charging as close to actual energy cost as possible. Adding on the layers of a network's bureaucracy is going to raise the price, and then no one will use them. Based on the EV Project data, we can see that when it's free, it's used. When we start charging for it, it's used a lot less* (3).

When reviewing the final reports of other grant awardees from the CEC PON-13-606 Electric Vehicle Charging Infrastructure, I found some of the findings to be counter intuitive to CEC program goals. For example, The Bay Area Charge Ahead Project 2 recommendation that "Future CEC funded projects for installing EV charging stations should require that the users of EV charging stations be assessed a fee for the use of the charging station." The example provided compared EV charging stations installed in the City of Berkeley, where they instituted a $1.50/hour fee, with the City of Palo Alto who offered fee free charging. The results were the City of Berkeley had 331 charging sessions, using just over 2,000 kWh, compared to the Palo Alto who had 1,707 charging sessions, using close to 14,000 kWh. The report states that "It can be inferred that charging stations in Berkeley are *more available* for use by electric vehicles that genuinely need to be charged".

Driver comments on the PlugShare app regarding the Berkeley EV chargers include:

"3-4x the retail price for electricity. Wow."

and

"1.5 per hr/4 hr limit. Only gained 15 miles in 2 hrs. Cost was $3.18"

The Center for Sustain Energy California Plug-in Vehicle Owner Survey determined that the #1 reason reported (38%) for acquiring an EV was saving money of fuel costs. (4) The requirement for networking and the fees associated increase the cost of EV charging stations, the burden of

which is passed on to the EV driver. In the Berkeley example, where the cost is $3.18 to add 15 miles' range, there is no incentive to purchase a plug-in vehicle. The average cost per gallon of gas in Northern California is $3.23 and gives you 58 miles of driving in a Prius. Underutilized charging stations do not meet the CEC objectives of increasing eVMT and do not result in a favorable GHG benefit-cost score. Empty charging spots do not serve to raise awareness of PEV, and can build animosity with ICE drivers when prime parking spaces sit empty.

2. **Stay flexible in your funding approach to allow for a variety of business models. Give site hosts "consumers choice" in their preferred method of delivery, to best suit their needs, and customize the approach for their unique circumstance.**

The Rand study points out, *"Methods of access and payment varied. Some systems were free, some used radio-frequency identification access cards that were linked to a payment account, some used smart phone apps that were linked to a payment account, and most also allowed the user to call a number and use a credit card directly." A challenge with the latter approach is that several sites had no cellular connections (e.g., underground parking garages… A related challenge, encountered at a number of sites, is that even with cellular access, we were unable to reach anyone to conduct the transaction.*
Calls reached recordings indicating unavailability or were put on hold for extended durations. Multiple sites were initially providing free charging to attract users, with plans to convert to a pay-per-charge system after some time period. For example, the Getty Center in Los Angeles elected to pay for electricity to its EVSEs for the first three years of operation, after which it would reevaluate payment options. Prior to installing EVSEs within its parking structures, Getty counted only seven employees who drove EVs. Seven months after installation of EVSEs, 26 employees drove EVs.
A general challenge with EVSEs in many settings is managing parking" (Page 106-107)

The 2017 Rand Study provided the example of the Getty Museum as being successful. The **total operating cost for 3 years offering fee-free charging to employees and public was around $34,000.** After 1 year, there was 26 PEV drivers, and there currently are over 70 employees charging at work, plus they have added 2 PEV for fleet purposes. The Getty increased the number of EV parking spaces from 20 to 42 after the first year, and is planning to add even more EV chargers along with a dynamic load management system to mitigate demand charges and respond to pricing signals. The Executive Staff at the Getty has decided to continue to offering the electricity free of charge because it is cheaper than trying to recoup costs.

Hearst Castle State Historic Park was initially approached by The EV Alliance – Central Coast Charge Ahead Project to participate in their grant proposal to the CEC. To participate in the grant, DPR would have had to enter into an agreement with ChargePoint for maintenance and network services which would have totaled $8,400 per year. Hearst Castle declined to participate and instead reached out to AAC to be part of our CEC grant. The end result is 14 fee-free EV chargers that are completely powered by the parks solar array and heavily used. There is no cost to Hearst Castle to provide this service, and this installation has had a significant impact on opening up the area to electric vehicle travel. It serves as a very visible sustainability demonstration project for close to a million visitors per year.

Currently, the strict eligibility requirements of the Cal eVIP program make it impossible for Adopt a Charger to utilize State funding to expand an alternative business model that has proven successful at raising awareness of PEV, maximizing GHG reduction, and increasing eVMT.

Most concerning is that AAC has been effective at installing EV charging in hard to commercialize locations, including disadvantaged communities and rural areas, where other business models do not make sense. We are not on track to meet Governor Brown's ZEV action plan calling for 1.5 million cars on the road in California by 2025. It is very important that the CEC remain focused on policies that incentivize the adoption of plug-in vehicles.

Thanks for considering my suggestions,

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Footnotes:

1. 2018-2019 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program
2. Rand: Process and Outcome Evaluation of the Alternative and Renewable Fuel and Vehicle Technology Program. By Lloyd Dixon, Tom LaTourrette, David A. Galvan, Charles A. Goldman, Nidhi Kalra, Christopher Nelson, Flavia Tsang, Paul S. Steinberg, James Lyons, Jerry Bowers, Bob Katin

Rand Document Details https://www.rand.org/pubs/research_reports/RR1948.html

- **Copyright:** California Energy Commission
- **Availability:** Web-Only
- **Pages:** 367
- **DOI:** 10.7249/RR1948
- **Document Number:** RR-1948-CEC
- **Year:** 2017

3. Lean and Mean, by Michael Kent, Charged EVs, Jan 28, 2014 https://chargedevs.com/.../lean-and-mean-the-ev-charging-pioneers-at-clippercreek/
4. Center for Sustainable Energy, California Plug-in Electric Vehicle Owner Survey Dashboard. https://cleanvehiclerebate.org/eng/survey-dashboard/ev
5. Schorske, Richard. California Electric Vehicle Alliance. 2016. ***Bay Area Charge Ahead Project 2 (BayCAP2).*** California Energy Commission

Exhibit A. Sonoma County utilization data. In September 2017, they initiated a fee for EV charging.