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Re: docket number 12-EPIC-01

February 13, 2014

Dear Mr Sethi,

Attached please find ChargePoint's questionnaire regarding potential initiatives for the second triennial EPIC Investment Plan.

ChargePoint participated in the first triennial workshops and comment process and look forward to collaborating with the Energy Commission and CPUC in this process as well.

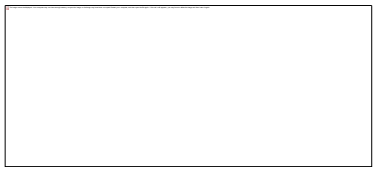
We participated remotely on the webinar workshop on Market facilitation. We believe the Energy Commission could facilitate a key role in EV Infrastructure Markets through EPIC strategies that target market validation in challenging markets that are critical to large scale EV Adoption.

Current funding either targets equipment deployment, rebates for vehicles or R&D for energy services. There is a vital need to enable close to commercialization products that are targeting business models for challenging markets that are critical to adoption.

Attached we have provided the Questionaire as a concept paper for strategic consideration.

Please do not hesitate to contact me with further questions or comments.

Sincerely,



Colleen Quinn
Vice President
Government Market Development and Public Policy

EPIC TRIENNIAL INVESTMENT PLAN 2015-2017
Proposed Energy Research Initiative
Questionnaire
Submitted by ChargePoint, Inc.
Colleen Quinn
Colleen.quinn@chargepoint.com

February 13, 2014

PROJECT TITLE: ChargePoint Multi-Family Dwelling EV Market Demonstration and Facilitation Project

Investment area: Technology and Demonstration and Deployment; Market Facilitation
Value chain: Demand side management

Issues and Barriers in the Charging Infrastructure in the Multi-family Market.

The market for plug-in electric vehicles is growing every year—and with it, the need for more places to charge. Utilities estimate that 80-90 percent of PEV charging occurs at home. To date, much has been done to accelerate installations of charging equipment in single family homes. However less progress has been made in the multi-family residential market where over 40% of Californian's reside.

The multi-family residential market faces unique challenges. These include parking access, electrical service access, installation and operating costs and legal covenants between the property owner or manager and a PEV owner/resident.

Another significant challenge is for the ratepayer. Most significantly, in a Multi-family Dwelling (MFD), the ratepayer and the consumer are not the same person. The consumer (or driver) doesn't own the property or the utility meter to which EVSE is attached. Conversely, the HOA or landlord doesn't own the vehicle.

This leads to interesting challenges including:
1) The electricity going through the charging station needs to be measured since it is on a shared utility service
2) The HOA or landlord usually pays for "common use" charges on the common area utility meter, e.g. for garage lighting, however tenants who don't have EVs do not want to pay for another tenant's EVSE, its electricity, or its maintenance.
3) If the HOA or landlord doesn't take the first step by installing a station or at least a panel upgrade, EV owners may not move in, and current residents will be inhibited from buying an EV.

These problems, unless tackled, will severely reduce the deployment of electric vehicles in California. The California Public Utility Commission has recently acknowledged the need to support these and other issues who need to charge their PEVs at MFD locations. Such solutions will involve taking full advantage of the potential for submetering as well as smart charging infrastructure.

Initiative Description and Purpose:

This project will develop a product specifically for this market that reduces costs for multi-family housing, shifts costs to the driver, and limits the costs that the landlord or HOA has to pay. This project will enable a successful business model that will facilitate this critical market in California. The project will test scalability and preliminary operating issues and bring the promising "pre-commercial" technology closer to the market utilizing smart charging and sub metering innovations. The goal is to bring commercial maturity to this market to deploy at a scale that is sufficiently large with conditions that sufficiently reflect anticipated operating environments. This initiative will demonstrate innovative strategies to achieve high penetrations of the State's investment in Plug-in Electric Vehicles in Multifamily locations in ways that minimizes system impacts and upgrade costs. It will leverage the unique market knowledge, experience and leadership of a California based EVSE manufacturer and network provider.

Recommended funding level: $4,000,000

Stakeholders:
Stakeholders who support this initiative include: EV Automakers, EV Drivers, Plug in America, Environmental organizations, Apartment Building managers, Homeowners' Associations, California PEV Collaborative, utilities, California Energy Commission, California Air Resources Board

Describe any public and/or private successes and failures the technology or strategy has encountered in its path through the energy innovation pipeline.
ChargePoint participated in two demonstration projects to deploy charging infrastructure targeting the Multi-family market in San Diego and San Francisco funded by the California Energy Commission. The San Diego project is currently underway. The San Francisco project provided a fully subsidized demonstration program for landlords, property owners and tenants. The challenges were technical in nature, including capacity issues and inspection.

In order to be successful, the market must transition from grant subsidies to a business model proposition that is sustainable. This proposal will address the economic viability of the market as well as product commercialization to meet scale of 10 million residents. Other related funding includes AB118 funding on EVSE Deployment has targeted this market (per projects above), but it has not funded product development or market facilitation projects such as this.

Justification
41% of California residents that live in multi-family housing – approximately 10 Million residents. Energy use per vehicle is approximately 3-4 MWh per year.

This project will maintain and/or improve emission reductions and will benefit air quality in California by creating infrastructure that encourages the use of electric vehicles. In order for California's infrastructure to support vehicles powered by electricity, consumers must have ease of access to electric refueling points.

This project complements federal and state ambient air quality standards by significantly improving the ability of PEV's to displace fuel and lower CO_2 emissions. It will create infrastructure that encourages the use of electric vehicles and provides the opportunity for multiple EV drivers to charge their vehicles where they work and live. CO_2 emissions have the potential to be reduced by an approximately 40% when the majority of EV users charge their vehicles multiple times per day. As transportation is the largest end-use emitter of CO_2 in the United States constituting 34 percent of 2007 total U.S. emissions (Energy Information Administration, CO_2 - History from 1949, available online at www.eia.doe.gov/environmental.html), an increase in the use of EV's will have a significant and positive impact on reducing the amount of CO_2 that is emitted into the air.

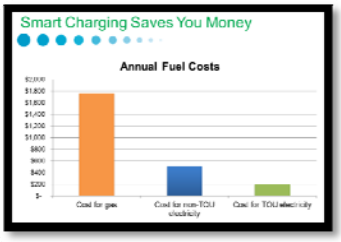
Quantifiable performance improvements for the proposed technology/strategy are a significant increase in EV ownership among multi-family dwellers. Because MFD's are mostly located in dense urban areas, the reduction in emissions should be primarily targeted in the correct geographies for maximum benefit in reducing smog and the number of spare-the-air days required each year.

Maximum market potential, if successful: 10 Million residents – approximately 3 Million vehicles. The initiative will provide a cost effective approach to the MFD market measured by the as total cost of ownership given the unique characteristics of MDUs.

The critical cost hurdle to the property owner is not only the initial cost, but also how to recover installation costs over time, as well as who pays for the electricity. The equipment must be "cost effective" for their needs. Based on our market knowledge, using the ChargePoint enabled software platform, the building owner is looking for cost recovery, fairness, and transparent accountability through reporting to the tenant, HOA and property owner. The Apartment owner has a value proposition of a 6-year payback on cost recovery and up to $1,000 a year in new revenue (see chart below).

Business	Cost Plan	Value Prop
Workplace	Subsidized	$550/year to retain an employee
Workplace	Paid	Employee pays $20 a day
City	Cost Recovery	Resident pays $1 a change
Apartment Building	Vending Machine	6 year payback, then $1,000 a year income
Pure Service Provider	Subscription Business	$60/month, 6 year payback
Hotel	Amenity	$550/year to attract guests
Retail	Amenity	$1 subsidy

By developing the smart charging product and business model for this market and this project program, we are also providing the developer or building manager with the opportunity to lower costs with TOU rates and manage energy load. In addition, the CPUC is exploring the possibility of EV Commercial rates as well as LCFS credits for the market. These are "cost effective" features of the program that enable ratepayer benefits.



This project will also explore ways to lower short-term and longer-term costs to ratepayers. The project will pilot "site electric load management" using the energy mana~~n~~gement features of the the ChargePoint network and product as another way to reduce TCO (Total Cost of Ownership) by potentially avoiding costly electric service upgrades and peak demand charges and second meter costs. Longer term the goal is to enable a critical market for EV Adoption .

ChargePoint plans to offer a network product that has been designed and tested specifically for this market. The success of this program will be in large part based on the product application. The game changing approach will be the business model proposition shifing costs to the driver but sharing revenue with the HOA, property owner/landlord.

Number of direct jobs created in California.

This is just a demonstration program so not many jobs will be created directly, but a successful demonstration could lead to hundreds of jobs installing infrastructure in multi-family housing projects...

The project is appropriate for public funding. Ratepayer benefits include greater reliability, potential energy and cost savings, understand and remove hurdles for adoption of EV's in MFD's, low income adoption of EVs, GHG emissions and promoting the adoption of Electric Vehicles.

Benefits

This initative will achieve enormous benefits of of lowering the capital investment of the consumer and promoting adoption; providing residents with new transportation options; creating new revenue streams for developers in a recession; creating jobs in a challenging economy; lowering ratepayer costs over the long term, and helping make maintain California's leadership in EVs and sustainability.

Most of the urban cities in California, including San Francisco, Los Angeles and Ssan Diego have ove r50% of their residents who dor not own a garage, and the expectation is that multifamily dwellings will increase.

Without a product that addresses the technical and economic challenges of ownership and usage of EV Infrastructure in this program, this segment of the population will not be able to own an electric vehicle, or participate in car sharing programs with EVs.

Importantly, the California Air Resources Board has passed emissionss standards that require by 2025 that one in seven vehicles on the California roads – estimated at 1.4 million altogether – must be ZERO Emission. The car manufacturers will scale production to California requirements, and markets such as this must be addressed.

Public Utilities Code Sections 740.1 and 8360:
The project will address the principles outlined in Code 740.1 with a high probability of ratepayer benefits and success. The project has not been duplicated and supports environmental improvements and reliability. Section 8360 is also supported with state of the art "smart charging "technology that will provide the opportunity for utility integration and sub meter protocol utilization.