

---

**(This is a Request for Information only - Complete Pages 1 and 2 for each initiative)**

**Title of Proposed Initiative: Increasing the adoption of DC Fast Chargers and Intelligent energy storage**

**Investment Areas** (Check one or more) – *For definitions, see First Triennial Investment Plan, page 12:*

- Applied Research and Development
- Technology Demonstration and Deployment
- Market Facilitation

**Electricity System Value Chain (Check only one):** *See CPUC Decision 12-05-037, Ordering Paragraph*

12.a. [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/167664.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

- Grid operations/market design
- Generation
- Transmission
- Distribution
- Demand-side management

California Energy Commission

**DOCKETED**

**12-EPIC-01**

**TN 72565**

**FEB 13 2014**

**Issues and Barriers:**

Describe the issues and barriers that are impeding full market adoption of the proposed clean energy technology or strategy (such as cost, integration, or lack of information).

Commercial and Public sector entities have the desire to install DC fast chargers to increase the adoption of electric vehicles but have limited adoption due to the impact of additional demand charges that can add thousands of dollars in cost every month. There has been limited integration with software controls and Energy storage to help mitigate these issues.

**Initiative Description and Purpose:**

How will this technology or strategy help address the issue/issues? Describe knowledge to be advanced to overcome critical barriers. Include the recommended funding level (minimum and maximum) for each project under this initiative.

We are proposing an integrated solution that reduces the impact of the DC fast chargers when combined with intelligent energy storage that can flatten the demand curve and reduce the rate of charge when utilities/customers need it the most. We are recommending a 35%-50% contribution from the host/supplier and a 50-65% from EPIC funds.

**Stakeholders:**

Identify the stakeholders who support the initiative.

We currently have over 75 customers with over 6,000 locations in CA who have expressed interest in this type of solution. The key segments include retailers, cities, counties, higher education, k-12, hospitality, restaurants, and gas stations.

The IOU's and EV manufactures also support this solution.

**Background and the State-of-the-Art:**

What research development and demonstration has been done or is currently being done to advance this technology or strategy (cite past research as applicable)?

We are currently in limited deployment of beta sites for this solution and would need to develop the software integration to derate the power in the DC fast chargers.

Describe any public and/or private successes and failures the technology or strategy has encountered in its path through the energy innovation pipeline: lab-scale testing, pilot-scale testing, pre-commercial demonstration, commercial scale deployment, market research, workforce development.

We have developed a similar solution in NY with Con Edison and have 3 working systems with two years of operating data.

Identify other related programs and initiatives that deal with the proposed technology or strategy, such as state and federal programs or funding initiatives (DOE, ARPA-E, etc.).

There are programs available for the DC fast chargers and the energy storage as a separate solution.

**Justification:**

Describe how this technology or strategy will provide California IOU electric ratepayer benefits and provide any estimates of quantified annual savings/benefits in California, including:

Name of sector and estimated size and energy use. This solution could be made available to any non-residential utility customer

**EPIC TRIENNIAL INVESTMENT PLAN 2015-17****Proposed Energy Research Initiative  
Questionnaire**

Quantifiable performance improvements for the proposed technology/strategy. We are expecting a 25% improvement in the demand load shedding for each unit and typically reduce the total demand costs by 20-35%.

Maximum market potential, if successful.

The market potential is very large in California. We would expect to be able to install thousands of systems in CA over the next 3 years.

Number of direct jobs created in California. For each 10 installations we would expect to add 3 new full time positions and 3500 man hours

Why this research is appropriate for public funding.

The research and deployment will help increase the adoption of EV charging and energy storage. Both of these will reduce the CO2 levels, increase grid stability, and reduce the overall peak demand requirements of utilities.

**Ratepayer Benefits (Check one or more):**

- Promote greater reliability
- Potential energy and cost savings
- Increased safety
- Societal benefits
- Environmental benefits – specify (lower CO2, less transmission, etc)
- GHG emissions mitigation/adaptation in the electricity sector at the lowest possible cost
- Low emission vehicles/transportation
- Waste reduction
- Economic development

Describe specific benefits (qualitative and quantitative) of the proposed initiative

We are faced with many challenges to the utility infrastructure and migration to non-fuel based vehicles. We need solutions that increase the adoption of EV vehicles and reduce the impact to the Grid. Consumer's biggest concern with EV vehicles is range and refueling time. Utilities are very concerned with the demand side management impact on the grid with wide adoption of EV vehicles. There are very few solutions that can tackle both issues with a single solution.

**Public Utilities Code Sections 740.1 and 8360:**

Please describe how this technology or strategy addresses the principles articulated in California

Public Utilities Code Sections 740.1 and 8360. The California