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

Title of Proposed Initiative: Developing an open interface for distributed energy storage systems to act as a single energy supply.

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.

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

California Energy Commission

DOCKETED

12-EPIC-01

TN 72567

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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).

Today many different energy storage providers have no integration between systems or are developing propriety solutions for individual customers. We would like to develop an exchange that would take Open ADR 2.0 feeds and could control thousands of disparate energy storage systems. The Exchange could provide available capacity to Utilities and CA ISO's on a day ahead, same day and 15min windows.

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.

By combining the excess capacity of distributed energy storage systems we could solve many of the current challenges that are facing utilities and CALISO. Key services at a local utility and ISO level could include demand reduction, ramp rate control, voltage and frequency regulation, renewable firming, etc.

Stakeholders:

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Proposed Energy Research Initiative

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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 other storage providers, utilities, retailers, cities, counties, higher education, k-12, hospitality, restaurants, industrial, agriculture and the Federal government.

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 have developed a similar system in ConEdison territory for a single group of customers. Our goal would be to work with key energy storage suppliers, EV manufactures, utilities and Cal ISO to develop this exchange and software interface.

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. Our experience and lessons learned will greatly reduce the cost and timing to develop this solution.

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.).

We have not seen funding for developing this type of software or exchange.

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

Quantifiable performance improvements for the proposed technology/strategy.

Maximum market potential, if successful.

The market potential is very large in California with the 100's of MW being installed over the next decade.

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Number of direct jobs created in California. This number is difficult to determine for the entire energy storage industry in CA. We would expect this to be in the hundreds if not thousands of new jobs.

Why this research is appropriate for public funding.

The research and deployment will help increase the adoption and integration of energy storage.

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 energy storage and provide additional revenue sources for host customers. Price is one of the biggest factors in mass adoption of energy storage and this provides a benefit to manufactures, host customers and the utilities.

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