

# 2015 EPIC ANNUAL REPORT



## ELECTRIC PROGRAM INVESTMENT CHARGE HIGHLIGHTS

### Building the 21st Century Electrical System

The electricity production and delivery system of the last century – characterized by large fossil fuel power plants and one-way transmission – has made vital contributions to California, its economy, and its people. However, this system, with its inefficiencies and reliance on increasingly

scarce resources, must evolve to meet California's needs in the 21st century. EPIC-funded projects are helping to accelerate this evolution so that the electricity systems optimally provide clean, safe, and affordable energy for California and its electric ratepayers.

### 2015 HIGHLIGHTS



**81 projects**

approved in 2015 across California



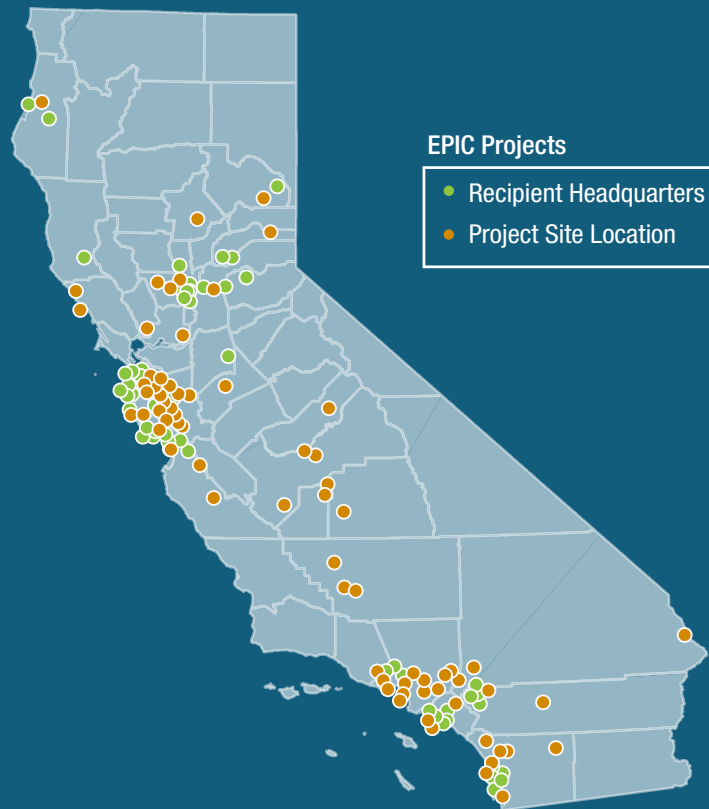
**17 funding opportunities**

for California innovators to receive crucial support



**100%**

Of EPIC projects awarded through a competitive solicitation, helping to ensure that EPIC funds are spent on the most promising innovations



## Empowering California

California is a diverse state, both in its geography and its people. This diversity has helped California become the eighth largest economy in the world, and it will be because of this diversity that California will achieve its ambitious energy goals. In 2015, the Energy Commission adopted a Diversity Policy Resolution outlining its commitment to ensure all Californians have an opportunity to participate in and benefit from Energy Commission programs. Assembly Bill 865 (Alejo, 2015) provided additional guidance, requiring the Energy Commission to develop and implement a comprehensive outreach plan to broaden and diversify the applicant pool to Energy Commission programs, and track progress toward those objectives.

## Sharing Results and Connecting Innovators

The EPIC Program not only fills funding gaps for early-stage energy technologies, it also fills critical information gaps that help de-risk these technologies to stakeholders.

The results of EPIC projects are made publicly available and are widely disseminated, assisting investors, customers, and policy makers in making informed decisions. This transparency provides information that protects public health and safety, and maximizes economic and environmental benefits.


In 2015, the Energy Commission continued to bring together researchers, technology developers and industry, policy, and regulatory stakeholders to share results and lessons learned, discuss future research needs, and identify optimal solutions and pathways for achieving the state's energy goals in a manner that provides the greatest benefits to all electric ratepayers

In December, the Energy Commission hosted the first annual EPIC Symposium, highlighting 40 projects working to achieve state energy goals.

## A Look at Our Progress: EPIC Awardees as of 2015

**18**   
**EPIC projects**

include a location in a disadvantaged community

**37**   
**EPIC projects**

include a certified small business

**20**   
**EPIC projects**

include a disabled veteran-, minority-, women- or LGBT-owned business

## EPIC & the Public in 2015



**21 workshops**

number of EPIC-related public workshops held in 2015



**1000+ people**

overall attendance at EPIC-related public workshops

**Energy Commission staff conducted outreach to numerous organizations to ensure disabled veteran-, women-, minority- and LGBT-owned businesses are aware of EPIC funding opportunities.**

**For more information on all EPIC-funded projects, please visit the Energy Innovation Showcase: [www.innovation.energy.ca.gov](http://www.innovation.energy.ca.gov)**

## Creating the Future of California Energy Innovation

### Solving Macro-Problems with Micro-Solutions

Local governments, through their Climate Action Plans and Local Energy Assurance Plans, have identified microgrids as a key strategy for achieving their clean energy goals. Microgrids enable communities to optimize the economic and environmental benefits of onsite renewables, electric vehicles, energy storage, and energy efficiency. Microgrids also allow communities to maintain power to critical services and facilities during grid outages. In 2015, the Energy Commission funded several projects demonstrating the use of microgrids in new ways, including at a fire station, an emergency shelter, and a zero-net energy community. These projects are paving the way for a distributed clean energy future.

### Driving Toward Our Clean Energy Goals

Californians are adopting electric vehicles faster than anywhere else in the country. Coordinating the charging of these vehicles has the potential to avoid costly upgrades to the electricity system while simultaneously reducing the cost of electric vehicle ownership. EPIC-funded projects are developing the enabling technologies to automate electric vehicle charging to bring benefits to both electric vehicle drivers and ratepayers.

### Accelerating Water Saving Technologies

No region has been impacted more by the drought than the Central Valley, specifically in its food and agriculture sector. Cutbacks in surface water deliveries have forced farmers to scale back agriculture production while groundwater depletion has caused land to subside. EPIC projects are developing new technologies to help alleviate the impacts of the drought, including data analytics to improve the water efficiency of agriculture irrigation, and a new technology called forward osmosis that more efficiently purifies wastewater from food processing into high quality water that can be reused onsite.

## Transforming Communities throughout California

California has adopted some of the most ambitious energy policy goals in the world. These policies provide a vision of California's energy future. This energy future will provide increasingly cleaner, safer, and more affordable energy for all of California's electricity customers. In addition, this energy future envisions a new electric system that will be more decentralized, will enable consumers to have greater control and more choices over their energy use, and will be more resilient to extreme weather events, threats to cybersecurity, and other hazards.

Public interest energy research helps create the innovative technologies and science to make this vision a reality. The California Public Utilities Commission created the Electric Program Investment Charge (EPIC) to advance new technologies and approaches that provide benefits to electric ratepayers in Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric service territories.

The California Legislature, via Senate Bill 96 (Committee on Budget and Fiscal Review, 2013), provides additional guidance to the Energy Commission in its administration of EPIC. Accordingly, the Energy Commission submits an Annual Report to the Legislature each April.

The 2015 EPIC Annual Report describes the Energy Commission's administration of EPIC in 2015, including information on all projects funded to date. The report is available online at:

[www.energy.ca.gov/research/annual\\_reports.html](http://www.energy.ca.gov/research/annual_reports.html)

## Looking Ahead: A Preview of 2016

### ***Advancing California's Energy Innovation Ecosystem***

Entrepreneurs must overcome numerous challenges and pitfalls on their journey to creating the next-generation of clean energy technologies. In 2016, the Energy Commission will fund projects that will help create a coordinated statewide network for incubating new innovations that benefit electric ratepayers.

### ***Improving Consumer Electronics***

Energy consumption attributed to electronic devices in the typical home and business has more than doubled since 1980 and is expected to continue to grow at a rate nearly double the forecasted growth rate for residential electricity end use. In 2016, the Energy Commission will fund projects to increase the energy efficiency of widely used electronic devices.

### ***2016 EPIC Innovation Symposium***

Scheduled for late 2016, the symposium will showcase the latest innovations in cutting-edge EPIC-funded technologies and highlight demonstration projects throughout the state.

### **For more information, contact:**

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ENERGY COMMISSION**

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