

# 2016 EPIC ANNUAL REPORT

## ELECTRIC PROGRAM INVESTMENT CHARGE HIGHLIGHTS



### EPIC: Driving Energy Innovations for Tomorrow's Energy Systems

Over the past decade, California has made significant progress in transforming its electricity system to meet energy demands. But despite this progress, current energy technologies will likely be insufficient to drive the scale of change needed to avoid the most serious impacts of climate change.

However, through the Electric Program Investment Charge (EPIC) program, California will continue to be a national and global leader in supporting innovations to decarbonize the electricity sector and to help California reach its ambitious climate and energy goals.

The EPIC program was established in 2012 to fund investments in public interest clean energy research. Grants are awarded for projects that create and advance new energy solutions, foster regional innovation, and bring ideas from the lab to the marketplace.

The program is managed by the California Energy Commission and the state's three largest investor-owned electric utilities – Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company – and projects it supports provide benefits to electric ratepayers.

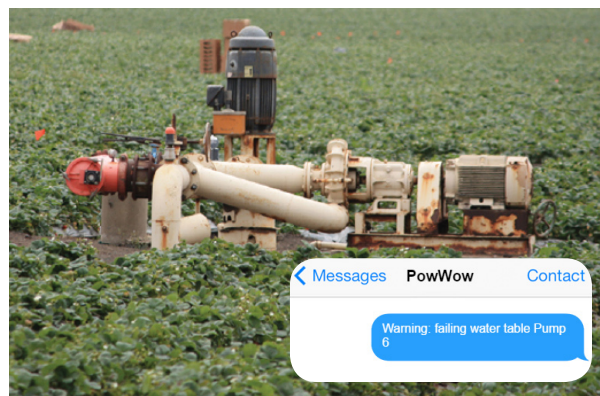
EPIC-funded research addresses not only California's short-term energy and resource needs such as the loss of natural gas storage at Aliso Canyon, but also its long-term goals like cost-effectively achieving the 50 percent Renewables Portfolio Standard.

The 2016 EPIC Annual Report provides a detailed review of the Energy Commission's administration of the program as well as information on projects funded. It is available online at: [www.energy.ca.gov/research/annual\\_reports.html](http://www.energy.ca.gov/research/annual_reports.html).

### A Look At Our Progress

#### Addressing California's susceptibility to drought with cutting edge water and energy innovations

Grants were awarded for 14 new projects that will advance on-site water recycling, demonstrate energy efficient water and wastewater treatment techniques, advance hybrid air/water cooling systems, enhance energy efficient practices for agricultural water use, and test innovative methods for water leak detection.



# 111

Projects approved  
in 2016

# 11

Opportunities for  
competitive grant  
funding released

# 97%

of EPIC projects  
awarded through a  
competitive solicitation

## Creating innovative solutions to address tree mortality

Several demonstrations to convert forest and woody biomass to energy are being supported through the EPIC program. Funding is also being used to support other innovative bioenergy projects like modular systems that can be operated in remote areas.

These projects will remove dead trees from areas stricken by bark beetle infestation and will help to decrease the risk of catastrophic wildfire damage to the forests.

In November 2016, EPIC grant recipient North Fork Community Power broke ground for a 2-megawatt biomass gasification plant in Madera County. The facility will use a commercial-ready General Electric gasifier to convert forest biomass from the surrounding area – designated a high hazard zone because of tree mortality – into bioenergy.

## Building future commercial opportunities through successful military partnerships

During 2016, the Energy Commission continued building on its successful partnership with the armed forces, and in October, signed a Memorandum of Understanding with the Department of the Navy to collaborate on issues such as energy assurance and resiliency, fossil fuel reduction, energy efficiency, renewable energy and water reduction.

This unique partnership opens the door to the military procurement system – the largest commercial procurement opportunity in the world – and provides a pathway to commercialization for future EPIC emerging technologies.

## Launching an energy innovation ecosystem



The year saw the launch of the California Energy Innovation Ecosystem, which includes four regional energy innovation clusters that provide entrepreneurs with key resources, mentoring, and services.

The Energy Commission also kicked off a small grant program that provides funding to enable entrepreneurs to “prove out” the early technical and commercial feasibility of their concepts and helps prepare them to compete for larger private and public funding.

## Mitigating operational limitations due to Aliso Canyon

The EPIC program is supporting several new projects to help preserve the reliability of natural gas and electric service for Southern California as a result of operational limitations at the Aliso Canyon natural gas storage facility. These projects will use innovative technologies and controls to reduce electrical consumption in government buildings and educational facilities in Southern California.

*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)*

# EPIC AWARDEES THROUGH 2016

55 

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

36 

EPIC projects include a certified small business

50 

EPIC projects include a location in a disadvantaged community.

## Commitment to Diversity

The Energy Commission demonstrated its continuing commitment to diversity through increased engagement with diverse communities, targeted outreach to underrepresented organizations, informing low-income and disadvantaged groups about Energy Commission funding opportunities, and sharing strategies to develop successful proposals and partnerships.

The annual EPIC Symposium was attended by nearly 100 representatives from small businesses, more than 50 women-owned businesses, and numerous enterprises owned by disabled veteran, minority and LGBT entrepreneurs.

For more on the Energy Commission's diversity commitment, visit <http://www.energy.ca.gov/commission/diversity/index.html>.

## Bringing Benefits to Disadvantaged Communities

In the latter part of the year, the Energy Commission adopted the Low-Income Barriers Study, under Senate Bill 350 (De León, 2015). This study provides recommendations to reduce barriers preventing people in disadvantaged and low-income communities from adopting clean energy technologies.

The Energy Commission is working to integrate these recommendations into EPIC, including:

- » Targeting 25 percent of technology demonstration and deployment funding for projects sited in disadvantaged communities
- » Conducting forums to share best practices and case studies on projects awarded in disadvantaged communities
- » Analyzing deployment models that would create market opportunities for clean technology in disadvantaged communities

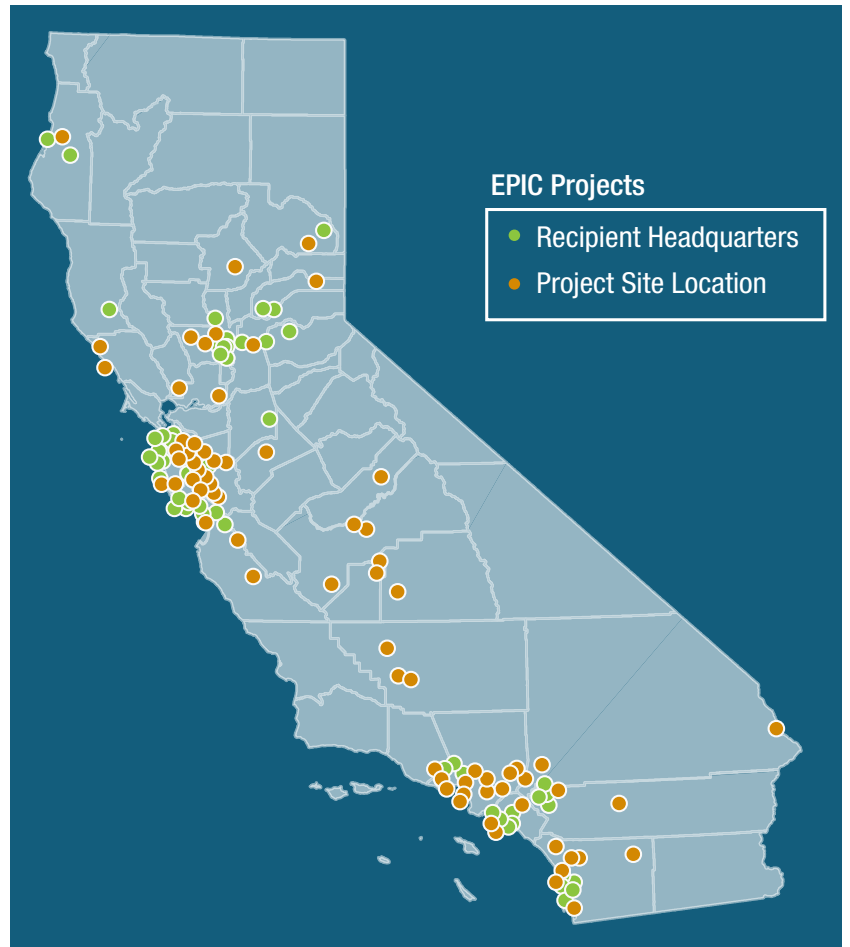
In 2016, 35.7 percent of funding for technology demonstration and development projects was awarded to projects that included at least one site in a disadvantaged community.

Although reporting on the recommendations from the Low-Income Barriers Study is not required by the California Public Utilities Commission, Energy Commission staff included the recommendations in the 2016 EPIC Annual Report and plans to report on progress in the next annual report.

## Looking Ahead: A Preview of 2017

The Energy Commission will take steps to implement the recommendations of the Low Income Barriers Study, including ensuring that at least 25 percent of technology demonstration and deployment funding is allocated to projects in disadvantaged communities.

The 2017 EPIC Innovation Symposium (scheduled for late 2017) will showcase the latest innovations in cutting-edge EPIC-funded technologies and highlight demonstration projects throughout the state.



EPIC recipient and project site locations

energy.ca.gov | Contact Us | Quick Links

SEARCH projects

HOME SEARCH

**HIGHLIGHTING ENERGY INNOVATION**

**BY THE NUMBERS**

DOLLARS AWARDED	PROJECTS AWARDED	MATCH FUNDING
<b>\$470 MILLION</b>	<b>279</b>	<b>\$223 MILLION</b>

**Edmund G. Brown Jr.**  
Governor

**Robert B. Weisenmiller, Ph.D.**  
Chair

CEC-500-2017-015-SUM

Commissioners  
**Karen Douglas, J.D.**  
**David Hochschild**  
**J. Andrew McAllister, Ph.D.**  
**Janea A. Scott, J.D.**



**CALIFORNIA**  
**ENERGY COMMISSION**