



# **Item 07: Electric Program Investment Charge (EPIC) 2024 Annual Report**

July 10, 2025 Business Meeting

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# EPIC Overview

- Established by the California Public Utilities Commission (CPUC) in 2012
- Funded by California utility customers
- Clean energy innovation - research, development, and commercialization
- Benefits to ratepayers
- Administered by CEC and electric IOUs



## Mission Statement:

***EPIC shall invest in  
“innovation to ensure  
equitable access to safe,  
affordable, reliable,  
and environmentally  
sustainable energy for  
electricity ratepayers.”***

CPUC Decision 21-11-028, November 18, 2021





# 2024 Annual Report

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- Progress toward strategic goals and initiatives
- Success stories and challenges
- Coordination activities





# EPIC Funding Cycles

Investment Cycle	Period	Total Budget
<b>EPIC 3</b>	2018 – 2020	\$444 million
<b>EPIC 4 Interim</b>	2021	\$147 million
<b>EPIC 4</b>	2022 – 2025	\$592 million



# **EPIC Investment** *(through 2024)*

**\$1.4 BILLION**

**EPIC funds invested  
since 2011**

**543**

**Total projects awarded**

**\$18.9 BILLION**

**Private sector investment  
following EPIC support**

**~60 PERCENT\***

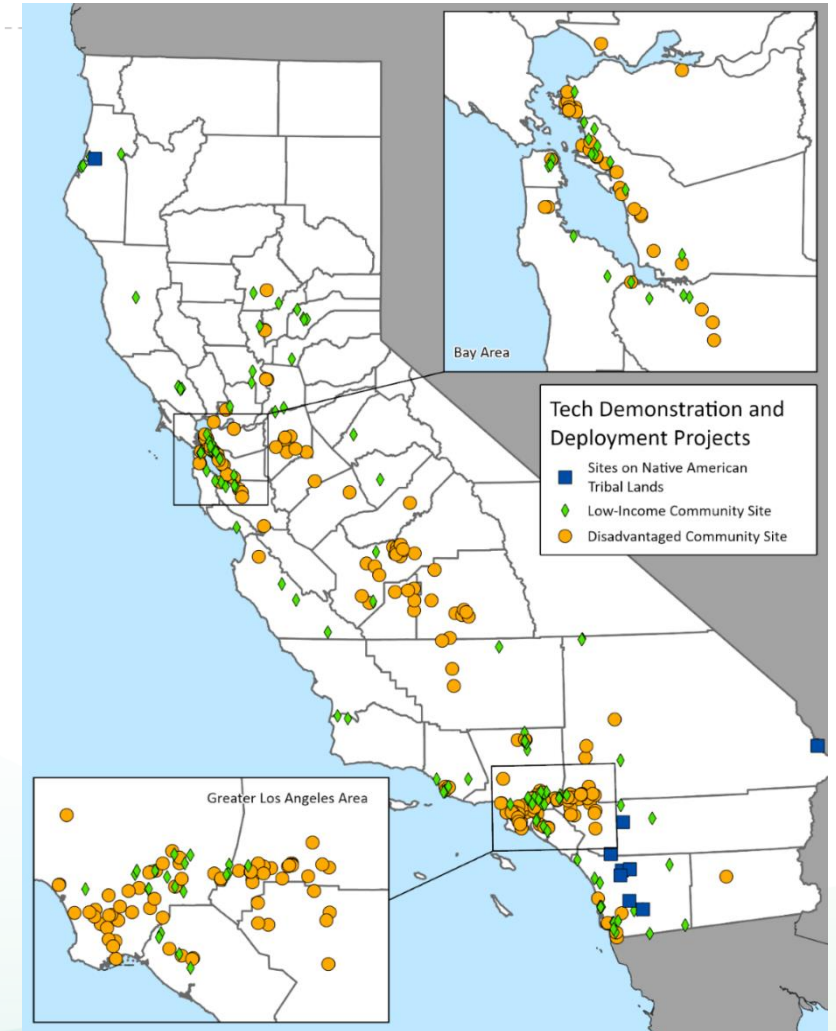
**TD&D funding awarded to  
projects located in and benefiting  
disadvantaged and low-income  
communities**

*\*Percent excludes combustion projects.*



# CEC EPIC Achievements

- **45** EPIC projects completed in 2024.
- **\$149 million** awarded to **43 new projects** in 2024.
- **\$30.4 million** of TD&D funds for projects for California Native American tribes through 2024.
- EPIC grant recipients attracted **\$727 million** in match funding.
  - For every \$100 of CEC funding, projects received \$53 in match funds.



Source: California Energy Commission



# 2024 Highlighted Benefits to Californians\*

**2.1 GIGAWATT-HOURS**

of electricity consumption avoided,  
or ~1.5 million homes powered for  
one hour

**\$600,000**

total on-bill energy savings

**348 COMMERCIAL AND  
INDUSTRIAL BUILDINGS**

underwent electrification projects

**1,000**

full-time jobs created

\*Estimated benefits in 2024 based on annual EPIC recipient survey.



# Coordination Activities

## Summary of EPIC Staff Engagement Activities in 2024

### Type of Engagement

Knowledge Sharing

Scoping Efforts for Research Roadmaps or Solicitations

Interagency Coordination with Local, State, and Federal Agencies

EPIC Administrator, CPUC, Policy + Innovation Coordination Group

Pre-application Workshops

Tribal Engagement

ESJ Community Engagement

Disadvantaged Community Advisory Group Presentations and Discussions





# 2024 Highlights by Objective

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## EPIC 4 Strategic Objectives

1. Advance Renewable Generation Technologies
2. Create a Nimble Grid to Maintain Reliability
3. Increase Distributed Energy Resource Value
4. Improve Value Proposition of Efficiency and Electrification Technologies
5. Enable CA Clean Energy Entrepreneurship
6. Inform an Equitable, Zero-Carbon Energy Transition

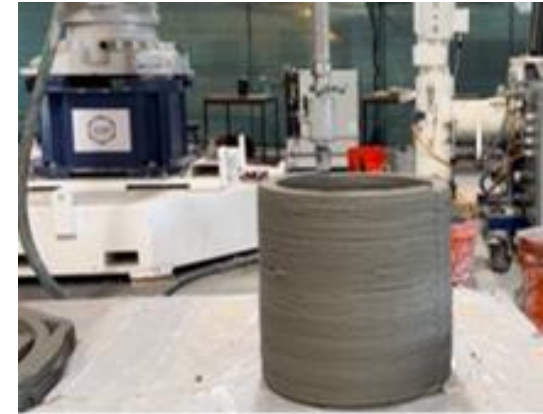


# 1: Advance Renewable Generation Technologies

**Focus:** solar PV, offshore wind, bioenergy, and geothermal energy generation

## 2024 Highlights:

- **Floating Offshore Wind (FOSW)**
  - Webinar with 170+ attendees on FOSW designs and technologies for environmental protection from 7 EPIC-funded projects
- **Geothermal and Lithium**
  - 3 final reports on geothermal energy and lithium recovery innovations.



3D-printed floating offshore wind system components.  
*Source: RCAM Technologies*



Geothermal plants near Salton Sea. *Source: The Center for Land Use Interpretation*



## 2: Create a Nimble Grid to Maintain Reliability

**Focus:** maintaining a flexible, reliable grid through zero-carbon firm resources, increased load flexibility, grid modernization, and cybersecurity risk mitigation.



Zinc-powered Battery Storage

Source: Power Engineering

### 2024 Highlights:

- \$30 million solicitation for advanced energy storage
  - 90 abstracts received
  - 5 awards anticipated
- \$8 million awarded to 2 projects that will use renewable gas coupled with onsite electricity generation to provide backup power.



### 3: Increase Distributed Energy Resource (DER) Value

**Focus:** increase electricity affordability and reliability by improving DER performance (e.g., electric vehicles and batteries)

#### 2024 Highlight: WattEV

- Fully installed **21st Century Truck Stop** advancing grid-friendly, heavy-duty transportation electrification
- Benefits: cleaner trucking and reduced negative air quality impacts, particularly to disadvantaged communities



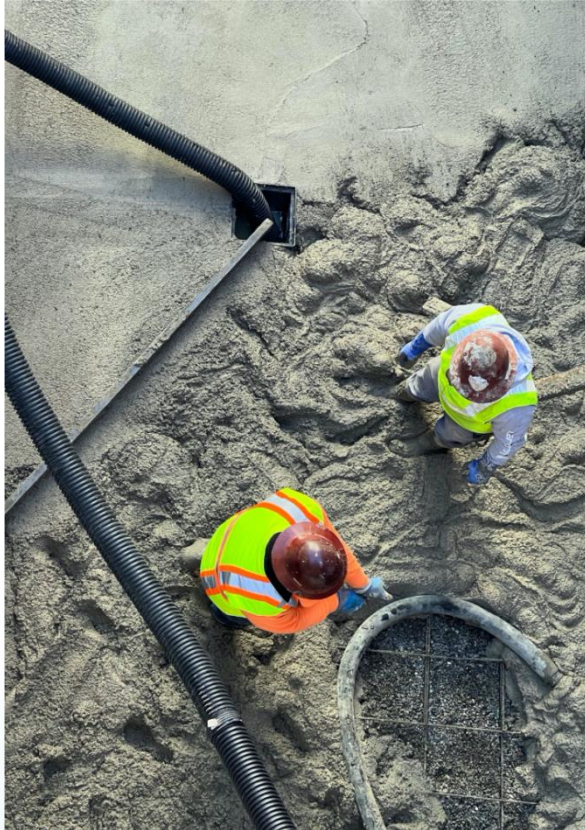
An electric freight truck at the WattEV charging site in Bakersfield.

Source: WattEV





## 4: Improve Value Proposition of Efficiency and Electrification Technologies



Zeolite-based concrete pour  
Source: Don Davies

**Focus:** advancing lower-emission solutions for hard-to-decarbonize industrial processes and building components

### 2024 Highlight: C-Crete Technologies

- First-of-its-kind pilot demonstration to replace the mineral binders in carbon-intensive Portland cement
- Uses zeolite rock, an abundant limestone alternative, and an electrified process for creating cement binders without industrial kilns



## 5: Enable CA Clean Energy Entrepreneurship

**Focus:** supporting clean energy entrepreneurs to take their inventions from idea to market

### 2024 Highlights:

- **Entrepreneurial Ecosystem:** supported 380+ companies
- **Twelve:**
  - Constructing a first-of-its-kind, demonstration-scale CO<sub>2</sub> transformation plant for low-emission sustainable aviation fuel production
  - Potential to reduce jet fuel lifecycle emissions by **90 percent**



Guide to Sustainable Aviation Fuels  
Source: Twelve



## 6: Inform an Equitable, Zero-Carbon Energy Transition that is Climate Resilient and Meets Environmental Goals



Example induction cooktop

Source: Freepik

### Focus:

- Applied research for policy, planning, and implementation
- Alignment with equity, health, clean energy, and climate resilience goals

### 2024 Highlights: Study – Cooking Energy and Ventilation Impacts on Children's Asthma

- Investigating child health and indoor air quality impacts from electric vs. gas cooking in disadvantaged and low-income communities in Fresno and Bakersfield.
- 85+ homes enrolled, with baseline air quality monitoring and health surveys completed in over 70 homes.



# Next Steps

- **EPIC 4 Funding:** 8 solicitations planned for release through Fall 2025
- **EPIC 5 Development Process:**
  - Strategic Goals — Adopted March 2024
  - CPUC adoption of strategic objectives — Anticipated late 2025
  - CEC begins developing EPIC 5 Investment Plan (2026-2030)





# Staff Recommendation

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- Approve the *2024 EPIC Annual Report*
- Staff to submit Annual Report to the Legislature and CPUC