2023 EPIC HIGHLIGHTS

ELECTRIC PROGRAM INVESTMENT CHARGE

California's premier public interest research program driving clean energy innovation and entrepreneurship to help meet the state's climate and energy goals

EPIC Investments (2012 – 2023): Cumulative Accomplishments

Building Decarbonization

Improves energy efficiency, comfort, and affordability while reducing fossil energy use in the built environment.

$267 Million – 113 Projects

Entrepreneurial Ecosystem

Supports innovative clean energy technologies from laboratory to market.

$252 Million – 59 Projects

Grid Decarbonization & Decentralization

Promotes the adoption of clean distributed renewable energy, grid innovation, and grid interactivity.

$245 Million – 142 Projects

Industrial & Agricultural Innovation

Lowers emissions and accelerates decarbonization of large GHG-intensive entities.

$160 Million – 72 Projects

Low-Carbon Transportation

Optimizes zero-emission vehicle functionality and grid integration to enhance clean mobility solutions.

$86 Million – 32 Projects

Resiliency, Health, & Safety

Elevates non-energy benefits, strengthens climate resilience, and helps advance an equitable clean energy transition.

$195 Million – 83 Projects

SIGNIFICANT IMPACTS ACHIEVED

$1.2 BILLION
Clean energy investments for research, development, and commercialization

$10.1 BILLION
Private follow-on investment attracted

$635 MILLION
Match funding provided

$365 MILLION
Federal follow-on funding received

$21 MILLION
Invested in projects on tribal lands

60% OF DEMONSTRATION FUNDS
Benefitting low-income or disadvantaged communities

EPIC IN 2023

EPIC GRANT OUTCOME HIGHLIGHTS

$89.3 million awarded and 24 projects completed

22 projects deployed 4,000 clean energy technology installations

18 projects saved utility customers $1.5 million

18 projects reduced 17,000 metric tons of carbon dioxide equivalent emissions – comparable to taking 3,700 cars off the road

Nearly 50% of surveyed EPIC grant recipients identified as small- or medium-sized businesses

HIGHLIGHTED PROJECTS

Redwood Coast Airport Microgrid, Humboldt County

- First fully renewable, multi-customer, front-of-the-meter microgrid in Pacific Gas & Electric Company service territory.
- Provides backup power to commercial customers, including the California Redwood Coast-Humboldt County Airport and U.S. Coast Guard Sector Humboldt Bay Command Center, and operates in California Independent System Operator markets.
- Enabled continuous grid services for up to 17 hours during eight separate power disruptions in 2023.
- Pioneered the development of several market innovations for multi-customer microgrids, including a community microgrid enablement tariff.

Blue Lake Rancheria Microgrid, Humboldt County

- A campus microgrid capable of providing power to the local American Red Cross evacuation center.
- Powered services for 10,000-20,000 residents during extreme events in 2017, 2019, and 2022, including a wildfire, earthquake, and public safety power shutoff.
- Project is credited with saving four lives by powering medical equipment that needed electricity to operate during grid outages.

Advanced Energy Communities, Lancaster and Richmond

- Lancaster and Richmond are developing virtual power plant (VPP) programs that integrate local renewables, energy storage, and flexible loads to reduce electric bills and improve grid resiliency.
- Developed the first VPP tariffs in California, enabling customers to receive a flat-rate bill credit for integrating their solar and storage systems into the VPP networks, thereby demonstrating critical financial benefits.
- Rehabilitated abandoned homes in Richmond will be offered at a discount to first-time, low-income homeowners. The homes will have energy efficiency retrofits, connected appliances, and clean energy technologies (e.g., energy storage, rooftop solar, heat pump space and water heating, and EV charging).
- Up to $2 million in incentives, revenue, and savings projected for the Richmond project over the next 20 years.

CalFlexHub, Lawrence Berkeley National Laboratory

- CalFlexHub advances new technologies for connected appliances and electric vehicles that use dynamic rates and facilitate the timing of energy use to match both cleaner and cheaper generation.
- Research results optimize the load flexibility user experience by showing that thermal or battery energy storage, including heat pump water heaters, tend to achieve greater response and user satisfaction because load shifting activities require minimal user attention.
- Ongoing research may provide a solution to residential homes with limited electric panel capacity, enabling more widespread electrification retrofits, by integrating multiple large electric loads with demand flexibility.
- Findings informed demand flexibility rulemakings at the CEC and California Public Utilities Commission, as well as the state's overall strategy for achieving California's goal for 7 gigawatts of load shifting by 2030.

> "CEC funding for the Lancaster Advanced Energy Community project has helped the City of Lancaster to deploy an innovative Virtual Power Plant platform, a community microgrid network, and new battery options to complement our existing residential solar mandate. These improvements will help keep our electricity rates affordable, increase community resilience, and lower our carbon footprint. Our next step is to team up with the seven partner cities in our CalChoice Community Choice Aggregation network to accelerate 100% renewable goals throughout the region."
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> – Jason Caudle, City Manager, City of Lancaster

This program is funded by California utility customers under the auspices of the California Public Utilities Commission.

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