

CCA Resilience Initiatives

As de-energization becomes the norm in California, CCAs are uniquely positioned to rapidly advance local energy resilience initiatives such as microgrids to keep critical facilities on line, and locally sited distributed energy resources (DER) like solar and energy storage to help prevent future wildfires and grid outages. CCAs are in fact already supporting local resilience projects and are actively advocating for policies that accelerate the development of mitigating resources. Without greater resilience, lives are at risk and climate goals may be jeopardized. Here are some of the ways CCAs are working to mitigate the impacts of Public Safety Power Shutoffs (PSPS) and boost resilience in communities throughout California.



Clean Power Alliance serves approximately 1 million customer accounts in 32 communities in Los Angeles and Ventura counties.

Solar + Storage Marketplace

In response to the recent uptick in interest in battery storage among CPA's customers affected by wildfires, CPA launched a Solar Marketplace in February 2020. CPA's online Solar Marketplace connects customers to free quotes from qualified, pre-screened, local solar installers who can also provide battery back-up solutions. The Solar Marketplace will enable customers to easily compare these technologies and calculate energy savings using CPA's default NEM-TOU rates, which are structured to incentivize battery installation.

Clean Energy Backup Power for Critical Facilities

CPA is currently working with its 31 local government members on a project that will facilitate the installation of clean energy backup power systems at local critical facilities used by the community for disaster preparedness. The installations will provide on-site generation to serve customer load, allow CPA to use the batteries for load shifting and resource adequacy purposes, and provide backup power during power outages and other moments of community stress. The program will help member agencies' public works, emergency management and municipal finance staff become well versed in how to install, use and account for these types of systems.

Technical Assistance for PSPS Preparedness

CPA provided technical assistance to its member agencies in PSPS and Woolsey Fire impacted areas who applied to the California Office of Emergency Services in October 2019 for competitive grants to fund clean energy options for power shutoff mitigation. CalOES is currently reviewing those applications, which include on-site generation and battery back-up with islanding capabilities at publicly accessible refuge facilities.



CleanPowerSF serves ~376,000 businesses and residents across the City of San Francisco.

Solar + Storage Resiliency Sites

CleanPowerSF's resilience activities to date have been in coordination with City departments who are served by San Francisco's Hetch Hetchy program. Initiatives include the installation of rooftop solar and storage at a local high school. San Francisco's Department of Emergency Management has designated the school a Resiliency Site, where services can be provided during and in the aftermath of emergencies. The City is now planning to use the same solar + storage approach at a recreation center and library.



East Bay Community Energy serves ~550,000 customers in Alameda County including in Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Oakland, Piedmont, San Leandro, Union City and the county's unincorporated areas.

Program to Support Medical Baseline Customers

EBCE has approved \$500,000 in funding to develop and fund a program aimed at addressing PSPS events for customers that are medically dependent on electricity. The approved funding will support the completion of three program activities through June 2020:

1. **Finding the best solution:** EBCE will partner with local public health institutions such as hospitals and municipal emergency services agencies to identify customers with critical, electricity dependent medical needs in Alameda County. EBCE will work with community partners to identify these customers, assess their individual needs, and develop the appropriate PSPS-response solutions.
2. **Immediate action with Solar + Storage:** EBCE will partner with other Community Choice Aggregators (CCAs) and the private sector to deploy solar and battery energy storage systems on homes of at least 30 medical baseline/electricity dependent customers to deliver immediate relief and test the approach and pricing for this solution. These back-up power systems will allow customers that are unable to leave their homes to safely stay at home during a power outage. It could also reduce power outage-related calls that these customers place to emergency services.
3. **Scaling the best results:** EBCE will take the learnings from the first two activities and contract with a consultant to develop a comprehensive solution for all types of medical baseline/electricity dependent customers.

Energy Storage for Low-Income Communities

EBCE, Peninsula Clean Energy, and Silicon Valley Clean Energy [issued a joint RFP](#) for 30 Megawatts (10 MW for each CCA) of behind-the-meter storage targeting disadvantaged and low-income communities. In June, the three CCAs [announced](#) an agreement with San Francisco-based Sunrun to install up to roughly 20 megawatts (MW) of emission-free solar and battery backup power to 6,000 households vulnerable to emergency power shutoffs during wildfire season.

BAAQMD Grant for Solar + Storage on Critical Facilities

East Bay Community Energy was approved for a \$300,000 grant under the Bay Area Air Quality Management District's Climate Protection Grant Program, in the category of 'Fostering Innovative Technologies.' EBCE has joined forces with Peninsula Clean Energy for this effort. [The proposal](#) focuses on putting combined solar and battery energy systems onto "critical facilities" that provide emergency services during natural disasters. This "resilient solar" strategy will provide a cleaner source of backup energy than diesel generators, reduce air pollution through increased clean energy, and reduce operating costs for public agencies.

Virtual Power Plant Contract with Sunrun

EBCE has signed a 10-year agreement with San Francisco-based Sunrun for 0.5 MW of energy storage in and around Oakland drawn from new solar + storage installations on low-income housing. The effort is part of the Oakland Clean Energy Initiative and proxy demand response, but also supports resiliency. See [press release](#) for more details.



Lancaster Choice Energy serves ~ 50,000 customers in the City of Lancaster in north Los Angeles County.

ZNE Microgrid Communities

In 2019, the California Energy Commission awarded the City of Lancaster \$4.9 Million in Phase II funding from the Commission's Electric Program Investment Charge (EPIC). Lancaster is working with the ZNE Alliance to develop an Alternative Energy Community, which includes two affordable ZNE residential home developments deployed as microgrid communities. The project team is designing renewable microgrids that enhance local resiliency, while remaining cost-competitive with traditional developments. The team will identify Distributed Energy Resource (DER) configurations (including an innovative flywheel energy storage system), microgrid system components, interconnection agreements, energy tariffs, and billing processes that will serve as prototypes for additional ZNE developments now being planned and built throughout the city, totaling over 1000 homes. These processes will also be organized into a toolkit for other California communities eager to develop affordable ZNE residential developments backed by renewable microgrids. Projects are currently undergoing interconnection process/design discussions with project team, Lancaster Choice Energy, and Southern California Edison.



MCE provides electricity service to ~470,000 customer accounts in 34 member communities across four Bay Area counties: Napa, Marin, Contra Costa, and Solano.

MCE is developing programs to mitigate the impacts of grid outages threatening the safety, reliability, health and welfare of customers, which disproportionately affect vulnerable populations, while supporting decarbonization and statewide efforts to improve overall grid reliability. MCE's Board of Directors approved the creation of a \$6M Resiliency Fund to support these efforts. MCE will continue to empower its communities by piloting advanced energy technologies such as battery storage and community microgrids enabling islanding to retain essential power supply during public safety power shutoff (PSPS) events and other outages - all while minimizing the use of carbon-emitting generators and fossil fuel technologies.

Energy Storage Program

In June 2020, MCE launched a new Energy Storage Program to deploy 15 MWh of dispatchable behind-the-meter battery energy storage systems to MCE customers over a 2-year period.

MCE's Energy Storage Program offers customer-sited storage solutions for backup power and resiliency, which will be owned by the customer. MCE will leverage these battery resources to also provide valuable grid services in support of its mission for reducing GHG emissions and maintaining low costs, along with helping customers reduce their energy costs.

One of MCE's key principals is to help vulnerable customers gain access to cleaner and more resilient energy options. MCE serves approximately 69,500 low-income customers, 12,500 medically-impacted customers, and approximately 40,000 customer accounts located in disadvantaged communities (DACs).

The Energy Storage Program is designed to help these priority customers remain safe during PSPS and other grid outages. Priority residential customers include low-income customers, those with serious medical needs that could become life threatening without power, and those in state-designated DACs. Priority commercial customers include critical facilities located in DACs and/or state-designated Tier 2 or Tier 3 High Fire Threat Districts, and those that provide critical support for communities during Public Safety Power Shutoff events and/or natural disasters, such as schools, community centers and other State-designated shelters, food banks, medical facilities, nursing homes, emergency services providers, etc.

MCE aims to remove barriers to participation by offering significant financial support for priority customers by reducing or even eliminating upfront and out-of-pocket costs. MCE is also exploring simple and affordable repayment options to repay any balance remaining for nonpriority customers. For all other customers, MCE is considering rate-based incentive structures, which may include monthly bill credits, and performance-based payments.

Accessing Self Generation Incentive Program (SGIP) Funds for Customers

As part of its Energy Storage Program, MCE is helping customers to apply for SGIP applications and has established a \$1.5 million bridge fund to help reduce upfront and out-of-pocket costs for customers who wish to install an energy storage system. To date, MCE has submitted 76 residential and 7 non-residential SGIP applications for its customers.

Marin Community Foundation Grant

MCE has received a \$750,000 grant from the Marin Community Foundation to expand its resiliency efforts, specifically targeting non-profit agencies that provide essential services during emergencies, and low-income multifamily residents in Marin county that lack the ability to acquire clean backup power solutions. Funds from the Marin Community Foundation would be used for new battery storage systems paired with solar generation that are able to island in the event of a PSPS event or emergency.

Engage with Regulatory Entities to Support and Accelerate the Development of Microgrids

The CPUC initiated a new rulemaking on microgrids (R.19-09-009) in 2019 to implement SB 1339 and to accelerate the adoption of microgrids. The goals of the proceeding are to: (1) develop standards for state and local permitting; (2) develop interconnection standards for microgrids; (3) implement tariffs, rules and studies to support the deployment of microgrids; and (4) investigate program opportunities to foster the development of microgrids. MCE is actively engaging under the proceeding to ensure that new microgrid interconnection and permitting rules and requirements are developed expeditiously, and that the appropriate tariff and programmatic incentives are being established to foster and accelerate the adoption of microgrids.

Portable Battery Distribution Program

MCE has purchased 100 portable batteries for distribution to MCE customers with a life-sustaining medical need for power, at no cost to them, thereby helping to provide some of the needed support to retain our customers' quality of life during an outage. The Goal Zero Yeti 3000 portable lithium batteries were delivered in July & August 2020 to the Marin Center for Independent Living, Napa Center for Independent Living, and Independent Living Resources (serving Solano and Contra Costa counties) who will be distributing them to customers with the greatest needs. The batteries are equipped with over 3kWh of storage for long runtimes and produces 1500W of continuous power and a 3000W surge for running high-power devices. The battery can run for 1-2 days after charge from solar (<800 watts) or from a standard electrical outlet in 25 hours. The battery is rated for 500 cycles to 80% of its original capacity and over 2000 cycles in its life cycle.



Monterey Bay Community Power serves ~300,000 customers in Monterey, San Benito and Santa Cruz counties and the Cities of San Luis Obispo and Morro Bay.

\$25 million Uninterruptible Power Supply Fund Program for Critical Facilities

MBCP will support financing mechanisms to develop backup energy supply for customers who are classified as "critical facilities" according to the CPUC's Self Generation Incentive Project (SGIP) as well as include additional sectors like school districts, libraries, agriculture, and traffic signals. Staff is working with regional emergency preparedness organizations, coalitions, and local agencies to identify sites that require backup energy supply. The program is launching in March 2020 where \$20 million will be allocated for qualifying public sector customers like city and county governments, public schools, public hospitals and public water and wastewater districts. The remaining \$5 million will be set aside as loan collateral for qualifying private sector customers.

Backup Energy Supply for Residential Resiliency

MBCP recognizes the urgent need to support greater energy resiliency across MBCP's current and growing service area considering PG&E's reliance on PSPS events. This proposed program will complement the developing Uninterruptible Power Supply (UPS) Fund providing back up power supply directly to residential customers (CARE/FERA, Medical Baseline) in Tier 3 and Tier 2 High Fire Risk Districts and connected feeders. Funding is estimated at \$1 million.

SmartConnect Program

MBCP is in the process of developing a two-part microgrid program focusing on local economic development and community resiliency. MBCP is currently negotiating a potential distributed energy resource in South Monterey county.



Peninsula Clean Energy serves ~290,000 customers in San Mateo County.

Local Resilience Program

Peninsula Clean Energy's Board of Directors has committed to a budget of up to \$10 million over three years for local electricity resilience programs. Peninsula Clean Energy is developing programs that address these high-level priorities: 1. backup generation to medically fragile residential customers; 2. community-scale emergency response centers outfitted with energy resiliency; and 3. critical infrastructure, goods, and services such as police/fire stations, hospitals and other healthcare facilities, communications facilities that support emergency first responders, and wastewater/sewage/water pumping facilities, as well as transportation infrastructure. As part of this initiative, Peninsula Clean Energy is exploring options to provide portable battery solutions for medically vulnerable residents and is working to promote uptake of SGIP solar+storage opportunities.

Resiliency Storage Program

Peninsula Clean Energy, East Bay Community Energy, and Silicon Valley Clean Energy are collectively pursuing 30 Megawatts (10 MW for each CCA) of behind-the-meter storage targeting disadvantaged and low-income communities. This program will aggregate residential and commercial customer load while providing clean backup power. In June, the three CCAs [announced](#) an agreement with San Francisco-based Sunrun to install up to roughly 20 megawatts (MW) of emission-free solar and battery backup power to 6,000 households vulnerable to emergency power shutoffs during wildfire season.

BAAQMD Grant for Solar + Storage on Critical Facilities

[Peninsula Clean Energy has joined forces with EBCE](#) to install combined solar and battery storage systems onto critical facilities that provide emergency services during natural disasters. This "energy resiliency" strategy will provide a cleaner source of backup energy than diesel generators, reduce air pollution through increased clean energy, and reduce operating costs for public agencies.



Pioneer began providing electricity to customers in February 2018, and currently provides electricity to more than 93,000 customers in Placer County.

Sectionalizing Solutions During PSPS Events

Pioneer facilitated sectionalizing improvements for the City of Auburn to ensure the Police Department had power during Public Safety Power Shutoff (PSPS) events. During PSPS events, it was discovered that the Auburn City Hall had power, but the Police Department across the alley did not. The sectionalizing was implemented in May 2020, and the Auburn Police Department now continues to receive power during PSPS events. Pioneer continues to advocate for additional sectionalizing to keep more of downtown Auburn, including the emergency broadcast radio station, powered up in PSPS events.

Substation Sectionalizing Analysis and Identification

Pioneer identified key substations in its service area that could be islanded and remain powered up when paired with local generation. Pioneer continues to explore opportunities where local resources can assist with or supplant generation from the broader grid.

Financing Home Fire-Hardening Projects

Pioneer owns and operates the mPOWER program, which is a property assessed clean energy (PACE) financing program that provides financing for energy efficiency upgrades, water conservation measures, and energy generation systems, which is then paid back through an assessment on the property taxes. Pioneer is exploring expanding the categories of approved improvements to include fire hardening options such as fire-rated roofs and hardscaping.

Optimizing the Use of Forest Feedstock to Reduce PSPS Events

Pioneer is working with local biomass facilities and biomass developers in exploring ways to continue and/or increase the use of forest feedstock in their existing/new facilities in order to reduce wildfire risks and ensuing PSPS events. Efforts also include analysis on how to improve the business case of new and existing biomass facilities along the lines of SB 901.

Microgrid Solutions for PSPS Events

Pioneer is working with developers and microgrid consultants on analyzing resiliency options involving integrated solutions that address PSPS events.



Pico Rivera Innovative Municipal Energy serves 17,600 accounts in the City of Pico Rivera in Los Angeles county.

Solar + Storage for Municipal and School District Buildings

The city has commissioned its locally-run power provider, PRIME, and TerraVerde Energy to launch a new, innovative program supporting the deployment of solar photovoltaic (PV) and battery energy storage systems at municipal facilities and, possibly, El Rancho Unified School District campuses. PRIME, in partnership with TerraVerde, will evaluate the potential of installing the systems, which would offer cost savings and energy resiliency benefits to both PRIME and the customers it serves. The technical analysis and results will be complete in August 2020.



Redwood Coast Energy Authority serves ~62,000 customers in Humboldt County, and the cities of Eureka, Arcata, Fortuna, Ferndale, Blue Lake, Rio Dell, and Trinidad.

Airport Microgrid Project

Redwood Coast Energy Authority is partnering with the Schatz Energy Research Center (SERC) at Humboldt State University, PG&E, and the County of Humboldt to build a 7-acre, 2.25 MW solar array and battery energy storage system at the California Redwood Coast – Humboldt County Airport (ACV). The County will house the airport microgrid, RCEA will own and operate the solar and battery systems, PG&E will operate the microgrid circuit, and SERC will be the prime contractor responsible for the project design and technology integration. The microgrid will include:

- 250 kW net metered system to offset daily electricity usage at the airport
- 2 MW of wholesale power that will feed clean energy directly into the grid
- 2 MW battery storage system providing 8MWh of energy storage

- Microgrid controller providing the ability to “island” from the main grid so the airport and adjacent Coast Guard facility can run fully on solar and batteries if there is a regional power outage
- Electric vehicle charging stations capable of demand response
- Enough solar-generated electricity to power 430 households, and prevent the emission of ~880 metric tons of carbon dioxide

The project is being funded by a \$5 million grant from the California Energy Commission’s EPIC Program, with \$6 million in match funding from RCEA. The system will be the first multi-customer, front-of-the-meter microgrid in Pacific Gas & Electric’s area of service. Groundbreaking will begin in spring of 2020 with the system expected to be fully operational in December of 2020.

Energy Storage

RCEA’s current solicitation of 5 MW of new distributed energy resource capacity with a preference for energy storage projects in Humboldt. The resulting projects will be able to respond to periods of high electricity demand (and coincidentally high emissions) by curtailing load at customer host sites. RCEA is also providing technical and administrative assistance for local public agencies interested in energy storage and state incentives through its Public Agency Solar Program.



San José Clean Energy serves ~330,000 customers in the City of San José.

- **Support & staffing to city’s emergency operations center**
 - For the October 9 PSPS alone, San José incurred approximately \$760,000 in event-related costs
- **Backup power at critical city facilities**
 - Contracts to be awarded to support the design and installation of systems
 - Focusing on clean technology options (e.g., solar plus storage, fuel cells, etc.)
 - Looking for opportunities to scale and provide backup at nearby sites and other City facilities
- **Large microgrids at new developments**
 - SJCE is working with local large developers to ensure new developments optimize on-site generation and maximize opportunities to design and build a more resilient grid
 - Reviewing the feasibility of owning and operating new distribution infrastructure to enable a larger microgrid
- **Group buy program for solar + storage**
 - Build partnerships to assist with group purchases of discounted solar+ storage for interested residents, connect them with pre-screened vendors, negotiate discounts
- **Support low- and moderate-income residents to access backup power**
 - Work with existing vendors (e.g. GRID Alternatives, Sun Shares) to find financial structure to address this new need
 - Leverage new features of SGIP for high fire-risk and disadvantaged communities
 - Partner with Silicon Valley Independent Living Center to promote and expand enrollment of the Disability Disaster Access Program



Silicon Valley Clean Energy serves ~270,000 customers in Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Saratoga, Sunnyvale, and unincorporated Santa Clara County.

Community Resilience Program

SVCE is investing \$5 million in community resilience for local jurisdictions by providing technical assistance for resiliency planning and funding for infrastructure development. These funds will help member communities reduce the economic and public health impacts from power outages while supporting local clean energy jobs and reducing emissions.

Resiliency Storage Program

SVCE, EBCE, and PCE issued a [joint RFP](#) for 30 Megawatts (10 MW for each CCA) of behind-the-meter storage targeting disadvantaged and low-income communities. The program will provide resilient solar power combined with battery storage to approximately 6,000 homes and hundreds of businesses in Alameda, San Mateo, and Santa Clara counties. This innovative program also enables the use of local resources to fulfill state “Resource Adequacy” requirements. Negotiations are currently ongoing with residential and commercial service providers. In June, the three CCAs [announced](#) an agreement with San Francisco-based Sunrun to install up to roughly 20 megawatts (MW) of emission-free solar and battery backup power to 6,000 households vulnerable to emergency power shutoffs during wildfire season.

Virtual Power Plants

SVCE is looking to harness the power of aggregated distributed energy resources (DERs), also known as virtual power plants. Working with Gridworks, SVCE assessed five different virtual power plant options for its service territory including Real Time Pricing, Critical Peak Pricing, Demand Response Auction Mechanism, Load Shift Resources, and a Distribution Services Model. The results of this investigation can be found here: [Silicon Valley Clean Energy Virtual Power Plant Options Analysis](#).



Sonoma Clean Power serves 224,000 accounts in Sonoma and Mendocino counties.

Substation and Grid Segmentation Analysis

SCP has begun providing support to local governments and communities seeking to limit the frequency and scale of PSPS shutoffs by analyzing substations and circuit topography. SCP identifies potential modifications to the grid and recommends conversations with PG&E to explore the addition of switches to isolate high fire risk branch circuits and, in some cases, a reduction in the areas served by substations directly located in Tier 2 and Tier 3 zones. This work could obviate the need for many expensive backup power systems and microgrids, and can proceed in advance of the 2020 fire season. Conversations between customers and PG&E have begun.

Study for Integrating Batteries into School Solar Systems

Since public schools in Sonoma and Mendocino Counties are heavily impacted by the loss of funding due to PSPS closures, SCP is assisting public schools with large solar arrays to conduct a study that will look at the feasibility of adding battery energy storage systems and automatic transfer switches. The aim is to help keep schools open, but also to create community places of refuge.

Study for Integrating Batteries into Municipal Solar Systems

Municipalities in Sonoma and Mendocino Counties are heavily impacted by the loss of electricity due to PSPS events. SCP is currently assisting municipalities with large solar arrays to conduct a study that will look at the feasibility of adding battery energy storage systems and automatic transfer switches and the associated infrastructure needed to support the additions. The aim is to help keep critical municipal operations going and/or create community places of refuge, depending on the location.

Advanced Energy Center & Battery Incentives

SCP is constructing a 10,000-sf training center and technology showcase for all-electric homes in downtown Santa Rosa that will open in 2020. The Advanced Energy Center will prominently feature clean backup power systems, bundle all battery incentives into a single point-of-purchase transaction, and offer zero percent on-bill financing.

Energy Resiliency Audit Program for Commercial Customers

SCP commercial customers are eligible to receive a free technical analysis to prepare for power shut offs. The analysis helps customers identify critical electric loads, size storage based on these critical loads, and identify whether battery storage is financially feasible.

Microgrid Planning Assistance

SCP is developing in-house expertise on microgrids and setting up relationships with contractors and partners, including the Electric Power Research Institute (EPRI), to provide early stage planning support to communities exploring microgrid and off-grid systems.

Advanced Energy Rebuild

SCP has extended and expanded its pioneering incentive program to pay \$17,500 to rebuild homes devastated by the 2017 October Firestorm with super-efficient, all-electric homes using renewable energy 24/7 and EV charging. The program was extended one year to support Kincade Fire victims. Thus far, the program has resulted in the rebuilding of 341 homes and the installation of 739 kW of solar PV and 793 kWh of battery storage.

Resilient New Homes for SCP Customers

Based on the success of Advanced Energy Rebuild, SCP has launched Advanced Energy Build, which hopes to speed economic recovery and local resilience by offering up to \$4,500 in incentives for all electric homes with battery storage.

GridSavvy Community for Distributed Energy Resources

Sonoma Clean Power's GridSavvy Community provides customer incentives for distributed energy resources including EV charging stations, smart thermostats, and heat pump water heaters. These smart technologies are aggregated and dispatched based on grid needs.

Making the Self Generation Incentive Program (SGIP) More Accessible

SCP residential customers can participate in the SGIP assistance program, which established a \$2.15 million revolving incentive fund to provide SGIP incentives upfront and provides customer assistance with applications to the SGIP incentive program. The aim is to reduce the upfront cost hurdles that customers face when installing battery energy storage systems. As of August, the program has received applications for 70 battery storage projects from 17 different contractors.

Regional PSPS Planning

SCP has partnered with the Sonoma County Regional Climate Protection Authority, Sonoma Water, the City of Santa Rosa, the County of Sonoma, and Urban Land Institute to run a regional planning process to identify the economic impacts of PSPS events and also the impacts of the *risk* of PSPS events (e.g., lost tourism due to potential PSPS). ULI will then work with the RCPA and SCP to develop a plan to restore energy resilience across the region.



For more information please contact:
Leora Broydo Vestel
Director of Communications
California Community Choice Association
(415) 999-4757 | leora@cal-cca.org