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.

Central Coast Community Energy serves ~400,000 customers in 33 communities throughout Monterey, San Benito, San Luis Obispo Santa Barbara Santa Cruz Counties.

$25 million Uninterruptible Power Supply Fund Program for Critical Facilities
3CE supports financing mechanisms for critical facilities to accelerate the development of backup energy supply. “Critical facilities” are defined according to the CPUC’s Self Generation Incentive Project (SGIP) plus 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. Under the program, $25 million is allocated to qualifying public sector customers like city and county governments, public schools, public hospitals and public water and wastewater districts.

Backup Energy Supply for Residential Resiliency
3CE recognizes the urgent need to support greater energy resiliency across 3CE’s current and growing service area considering PG&E and SCE’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.

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 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 32 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 for competitive grants to fund clean energy options for power shutoff mitigation, such as on-site generation and battery back-up with islanding capabilities at publicly accessible refuge facilities.

CleanPowerSF serves 380,000 businesses and resident accounts across the City of San Francisco.

Solar + Storage Resiliency Sites
CleanPowerSF coordinates with other City departments who are served by San Francisco's Hetch Hetchy program to develop local resiliency projects. 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, among other sites.

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. EBCE will be adding the Cities of Newark, Pleasanton, and Tracy in April of 2021.

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. It has partnered with local public health institutions to identify the most common types of electricity dependent durable medical devices used in Alameda County by Medical Baseline customers. EBCE is assessing the load of these devices (individual and common combinations), pairing appropriate resilience solutions (e.g., mobile and stationary battery energy storage), and developing a budget for a potential Medical Baseline customer incentive program.

Resilient Home
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 July 2020, 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. Since EBCE’s Resilient Home program launch in August 2020, EBCE and Sunrun initiated outreach has resulted in over 800 customer registrations and approximately 400kW of solar and 500kW of storage under contract.

BAAQMD Grant for Solar + Storage on Critical Facilities
EBCE 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 modeled solar and battery energy storage systems on 300 ‘critical public facilities’ through the project. Each facility was identified by EBCE’s local government partners as provide emergency services to the community during a major grid outage. EBCE is currently working on a procurement strategy that will result in deployment of
these systems at scale, reducing cost and complexity for its local government partners and industry stakeholders.

**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 ~480,000 customer accounts in 36 member communities across four Bay Area counties: Napa, Marin, Contra Costa, and Solano.

MCE is implementing 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 is empowering 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 gap funding and other significant financial support for priority customers that reduces or even eliminating upfront and out-of-pocket costs. MCE is also offering simple and affordable repayment options to repay any balance remaining for nonpriority customers. For all other customers, MCE is offering rate-based incentive structures, which include monthly bill credits, and may in the future include 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 144 residential and 8 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 in Marin county and 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 purchased and distributed 100 portable batteries to MCE customers with a life-sustaining medical need for power, at no cost to them, thereby helping to retain our customers’ quality of life during an outage. The Goal Zero Yeti 3000 portable lithium batteries were delivered in partnership with the Marin Center for Independent Living, Napa Center for Independent Living, and Independent Living Resources (serving Solano and Contra Costa counties) who have distributed 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 a standard electrical outlet in 25 hours.

Peninsula Clean Energy serves ~295,000 customers in San Mateo County.
Comprehensive Resilience Strategy
Peninsula Clean Energy’s Board of Directors has committed a budget of up to $10 million over three years for local electricity resilience programs that will address these high-level priorities: 1) backup generation for medically vulnerable residential customers; 2) helping residents install solar+battery storage on their homes; 3) community-scale emergency response centers outfitted with energy resiliency; and 4) 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.

Portable Backup Batteries for Medical Devices
Peninsula Clean Energy has donated 3000-watt portable backup batteries to 130 Medical Baseline customers who live in areas at greatest risk from PSPS events (tier 2 or 3 fire threat districts or impacted by 2 or more previous PSPS events). Those who live in high fire threat areas also received portable solar panels to recharge the batteries. This program targeted residents who cannot install traditional solar+storage systems on their homes, especially renters or those who reside in low-income housing or mobile and manufactured homes. This effort is closely coordinated with local emergency battery loan programs funded by PG&E, including joint referral protocols to ensure customers are served by the most appropriate program. All customer-facing elements of the program are available in both English and Spanish, including intake and battery delivery and training.

Power On Peninsula
As part of the Power On Peninsula program, Peninsula Clean Energy is partnering with Sunrun to provide solar+storage installations to single-family homeowners. Program participants can have the solar+storage installed for as little as $0 out-of-pocket and receive $1,250 after installation from Sunrun. These installations contribute to the 20 MW of behind-the-meter solar and battery storage collectively pursued by Peninsula Clean Energy, East Bay Community Energy, and Silicon Valley Clean Energy.

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 2018 and currently serves 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 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.

Redwood Coast Energy Authority serves over 63,000 customers in Humboldt County, including 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, PG&E, and the County of Humboldt to build a microgrid featuring a 2.2 MW solar array and battery energy storage at the California Redwood Coast – Humboldt County Airport. RCEA will own and operate the solar and battery systems, PG&E will operate the microgrid circuit, the County is hosting the microgrid, and the Schatz Center is the prime contractor responsible for the project design and technology integration. The system will be the first multi-customer, front-of-the-meter microgrid in PG&E’s area of service and will include:

- 250 kW net metered system to offset daily electricity usage at the airport
- 2.2 MW of wholesale power that will feed clean energy directly into the grid
- 2.2 MW battery storage system providing 8.8 MWh 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 during regional power outages
• Electric vehicle charging stations capable of demand response
• Enough solar-generated electricity to power 430 households

**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, to be financed via a loan from the U.S. Department of Agriculture. Groundbreaking is set for spring of 2021 with the system expected to be fully operational in December of 2021.

**Energy Storage**
In 2020 RCEA issued a Request for Proposals for Behind-the-Meter Distributed Resource Adequacy (DER RFP) The DER RFP aimed to develop 5 megawatts of energy storage and distributed resource capacity behind customer meters at preferred sites in Humboldt County, including public agencies and schools, low-income homes and businesses, and other sites within high fire threat areas. The main objectives of the program are 1) resource adequacy value, 2) critical energy resiliency during grid outages, 3) customer utility cost savings, and 4) grid decarbonization. RCEA short-listed two companies, TRC and Swell Energy, for contract negotiation.

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**. Ten projects have been funded so far, securing over $2.6 million to implement solar and storage projects that provide cost savings, greenhouse gas reductions and resiliency to our community.

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

• **Backup power at critical city facilities**
  o Contracts to be awarded to support the design and installation of systems
  o Focusing on clean technology options (e.g., solar plus storage, fuel cells, etc.)
  o Looking for opportunities to scale and provide backup at nearby sites and other City facilities

• **Large microgrids at new developments**
  o 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
  o Reviewing the feasibly of owning and operating new distribution infrastructure to enable a larger microgrid

• **Group buy program for solar + storage**
  o Promote Bay Area Sunshares discounts for solar + storage. Information is included on the SJCE website, in the newsletter, and regularly on social media. Staff also partnered with SunShares to host several webinars to help residents understand the discounts and solar technology/benefits. This is the first time SunShares has done a concerted effort to reach San José residents outside of corporate events and with SJCE outreach support.

• **Support low- and moderate-income residents to access backup power**
  o Work with existing vendors (e.g. GRID Alternatives, Sun Shares) to find financial structure to address this new need
  o Leverage new features of SGIP for high fire-risk and disadvantaged communities
  o Partner with Silicon Valley Independent Living Center to promote and expand enrollment of the Disability Disaster Access Program, which provides access to backup portable batteries to qualifying customers who rely on electrical medical devices. Messaging is included on the SJCE website, in the newsletter and regularly on social media.
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: Lights On Silicon Valley
In July 2020, SVCE, EBCE, and PCE announced an agreement with San Francisco-based Sunrun to install up to roughly 20 megawatts (MW) of solar and battery backup power to 6,000 households, emphasizing those vulnerable to emergency power shutoffs during wildfire season and disadvantaged or low-income communities. SVCE’s program, Lights On Silicon Valley, will provide a $1,250 rebate for single-family customers who enroll their solar and battery system in a Sunrun-managed aggregation of these local resources to help SVCE fulfill state “Resource Adequacy” requirements. Half of SVCE’s MW total is targeted to be installed at multi-family properties that can leverage additional state incentives.

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.

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 aims 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 aims 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 2021. 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 451 homes and the installation of 1,060 kW of solar PV and 1,210 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. Additional incentives are offered for low-income housing developers.

**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 November, the program has received applications for over 100 battery storage projects from 19 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.

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