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.

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.

Clean Power Alliance serves approximately 1 million customer accounts in 31 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 our 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.

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. The RFP seeks responses from installers that will aggregate residential and commercial customer load.

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 focusing its resiliency efforts on the most vulnerable customers and critical facilities in its service area. On the residential side, this includes low-income and disadvantaged customers and those with medical conditions. On the non-residential side, MCE is focusing its efforts on critical facilities that provide an important service to the community during power shutoffs, such as emergency centers, first responders, and health care providers. MCE is addressing the current obstacles to the development of clean energy resiliency projects through the initiatives and potential funding opportunities described below. These initiatives, described in greater detail here, are intended to cover the full life-cycle of clean energy resiliency project development, from customer identification and outreach, to the funding of actual resiliency projects and additional fund leveraging.

Promote Resiliency Projects as a Marketing, Education and Outreach (ME&O) Partner under the Self-Generation Incentive Program (SGIP)
MCE is preparing an application to the California Public Utilities Commission (CPUC) to become a ME&O partner under the SGIP Resiliency Equity Budget. If successful, MCE will get access to SGIP funds to educate customers about the SGIP program and to identify critical customers for SGIP program participation. The outreach will focus on our most vulnerable residential customers, as well as critical commercial facilities. MCE is hoping to roll out the project to customers by April 2020. It is estimated that approximately $1 Million in SGIP ME&O funds could be made available to MCE for this work.

Support Technical Assessments, Project Siting and Funding through Leveraging Opportunities
Under the Single Point of Contact (SPOC) model, MCE has already been working with customers to leverage all program or grant funding opportunities available when participating in MCE programs. MCE is building upon its existing experience and contacts to leverage additional funds for its customers in the development of resiliency projects. MCE is in conversation with the Marin Community Foundation (MCF) to identify collaboration opportunities to fund resiliency projects at critical customer sites. MCE is also supporting local governments in its service area in their grant application to the Governor's Local Government PSPS Resiliency Program and investigating opportunities for resiliency project financing, including, but not limited to, financing opportunities for mechanical and thermal energy storage under the Small Business Financing program provided by the California Alternative Energy and Advanced Transportation Financing Authority.

Develop Distributed Energy Resources at Critical Customer Sites Using MCE Resiliency Fund
MCE's Board has approved the creation of a Resiliency Fund and initial funding in the amount of $3 Million. With these funds, MCE intends to support the further development of clean energy resiliency projects at a select number of strategic customer sites in MCE's service area such as customers in low-income and disadvantaged communities, medically vulnerable customers, and customers that provide community and emergency services such as emergency shelters, first responders, schools, and community centers.

Maximize the Value Stream for the Customer and MCE by Using Storage Projects as Dispatchable Assets for Participation in Wholesale Markets
MCE has issued a [solicitation](#) seeking qualified organizations and business entities to support programmatic deployment of battery energy storage systems to MCE customers to: (1) increase local resiliency and reliability; (2) enhance MCE's peak load management strategies; (3) support MCE's decarbonization strategies; and (4) support statewide efforts to improve overall grid health. In partnership with the organization(s) selected through this solicitation, MCE intends to develop a MCE energy storage program that offers innovative, valuable, and affordable energy storage options to enhance resiliency and reliability for eligible customers, while also providing meaningful new opportunities for procurement cost savings and enhanced risk management capabilities to MCE through strategic load-shaping and active peak load management strategies. The goal of this program is to get approximately 35MW of dispatchable behind-the-meter storage + solar to increase local resiliency and reliability and to support MCE communities during PSPS events.

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.

![Monterey Bay Community Power logo]

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.

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.

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.

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.

SAN JOSE CLEAN ENERGY

San José Clean Energy serves ~328,000 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**
    - RFI/RFP will be issued in early 2020
    - 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 feasibly 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 solar+ storage for interested residents, connect them with pre-screened vendors, negotiate discounts
- **Support low- and moderate-income residents to purchase solar + storage**
    - 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 online solar marketplace to accelerate

SILICON VALLEY CLEAN ENERGY

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.

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 RFP seeks responses from installers that will aggregate residential and commercial customer load.

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

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 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 2020. The 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.

Technical Assistance to Commercial Customers
SCP will be providing technical analysis services to commercial and industrial (C&I) customers to prepare for power shut offs, including audits to identify critical electric loads and advice on the most economical way to provide back-up power.

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 – Expanded
SCP has extended and expanded its pioneering incentive program to pay $17,500 to rebuild homes affected by the 2017 wildfires with super-efficient, all-electric homes using renewable energy 24/7 and EV charging. The program is extended one year to support Kincade Fire victims. Thus far, the program has resulted in the installation of 560 kW of solar PV and 581 kWh of 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's board recently approved a program to help SCP residential and municipal customers' gain access to SGIP funds by establishing a revolving incentive fund and providing assistance with applications to the incentive program. The aim is to reduce the upfront cost hurdles that customers face when installing battery energy storage systems.

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.

Municipalization

The City and County of San Francisco, which operates **CleanPowerSF**, and **Valley Clean Energy** have issued bids to purchase PG&E assets in their respective territories. VCE serves customers in Yolo County, and CleanPowerSF serves customers in San Francisco. The City of San José, which operates **San José Clean Energy**, supports the conversion of PG&E to a Customer-Owned Utility.

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