



DATE: May 10, 2021

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT Solar and Storage for Critical Facilities

RECOMMENDATION

That the Council Sustainability Committee (CSC) reviews and comments on this report and provides direction to staff.

SUMMARY

When East Bay Community Energy (EBCE) launched in 2018, the jurisdictions in Alameda County's primary goals were to provide cleaner electricity at competitive rates and also to drive investment in renewable energy and improve resilience of local communities. In 2019, EBCE's Local Development program began investing in customer side distributed energy resources initiatives including those that enhance community energy resilience. EBCE is now offering its Joint Power Authority (JPA) members, including the City of Hayward, the opportunity to participate in a new procurement program that aims to deploy solar and battery energy storage systems (Solar + Storage) at critical municipal facilities.

This procurement program includes an upfront assessment of municipal facilities by an independent engineer (hired by EBCE) to identify potential roof, structural or electrical capacity upgrades that might be required to install Solar + Storage systems. EBCE is reducing risks to all parties by hiring an independent engineer to complete an analysis for buildings currently in the Phase I portfolio and is offering to act as the counterparty to a power purchase agreement (PPA) which will bring down costs, streamline procurement, and reduce the amount of time required by City staff. Hayward would join three other member agencies in the first phase of EBCE's procurement which will enable economies of scale. Participating in this opportunity would increase the potential for on-site solar generation, advance Hayward's goal of building electrification, and ensure that more of Hayward's critical facilities are prepared for PG&E Public Safety Power Shutoff events, rolling blackouts and other potential power outages such as those caused by a major earthquake.

BACKGROUND

EBCE formed in 2016 as a joint powers authority to provide cleaner, greener energy at lower rates to Alameda County customers. EBCE started providing electricity to commercial and municipal accounts in June 2018 and to residential customers in November 2018. Information about EBCE is available on their website¹. Staff has provided many reports about EBCE to the CSC and Council, all of which are available on the City's website². In July 2018, the EBCE Board of Directors, which includes a Hayward City Council representative, approved a Local Development Business Plan (LDBP)³ identifying several strategies to direct investments throughout Alameda County to build renewable energy generation, create local jobs, and help member cities reduce greenhouse gas (GHG) emissions.

City of Hayward Policies – EBCE's Municipal Facilities Solar + Storage project would support the following Council-adopted policies.

General Plan Policy NR-4.10 - Public Renewable Energy Generation - The City shall ensure that all new City-owned facilities are built with renewable energy, as appropriate to their functions, and shall install renewable energy systems at existing City facilities where feasible.

General Plan Policy Program CS-13 - Energy Assurance Plan - The City shall develop and implement an Energy Assurance Plan to ensure that critical facilities have access to power during emergencies and power outages.

Resolution 16-082, adopted by Council on May 17, 2016, requires any new or significant retrofit of a City building be constructed as zero net energy (ZNE).

Resolution 16-219, adopted by Council on December 6, 2016, establishes a goal of ZNE across the City's portfolio of facilities by 2025.

DISCUSSION

Solar and battery energy storage systems provide clean, renewable electricity to buildings on a daily basis and can reduce time-of-use charges during peak pricing periods. In addition, the systems provide resilience benefits allowing critical facilities to continue to operate on a limited basis during a power outage using electricity stored and generated onsite.

In 2019, EBCE was awarded a \$300,000 grant from the Bay Area Air Quality Management District (BAAQMD) to identify critical facilities in Alameda County and conduct preliminary assessments for back-up power from solar and battery energy storage systems at these sites. EBCE hired ARUP as a technical consultant to compete a facility screening process and staff provided a list of critical facility sites for the analysis. Each facility was scored according to four screening criteria:

¹ <https://ebce.org/>

² <https://www.hayward-ca.gov/your-government/departments/utilities-environmental-services/east-bay-community-energy>

³ <https://ebce.org/local-development-business-plan/index.html>

1. hazard score (accounts for the range and severity of hazards faced by each site according to its location)
2. service score (ranks facilities based on number of people served in the immediate area)
3. priority zone score (additional recognition for sites located within either Disadvantaged Communities (DAC) zones, Low Income zones, or both); and
4. solar feasibility (high-level analysis of solar photovoltaic (PV) feasibility based on roof area and shading)

EBCE is collaborating with its Joint Power Authority (JPA) members in Alameda County, including the City of Hayward, to identify a cost-effective portfolio of Solar + Storage projects for municipal buildings for an upcoming Request for Proposals (RFP) which will identify a PPA provider(s) and project installation teams. EBCE is piloting a new procurement model in which they would act as the counterparty for a standardized PPA contract between a PPA vendor and its JPA partner municipalities. As opposed to a traditional PPA where the City would conduct its own procurement and hold a contract directly with the PPA provider, having EBCE representing multiple jurisdictions and a large portfolio will streamline the procurement process, reduce risk, and bring down costs.

Across EBCE's service area more than 300 critical municipal facilities were analyzed to determine the feasibility of solar and battery energy storage systems to meet critical loads in time of grid outages. City staff contributed to this initial portfolio submitting approximately twenty potential critical municipal facilities to EBCE. From that list, eight sites in Hayward are currently being considered as part of EBCE's Phase I procurement project portfolio (see Table 1). The following is a preliminary list and is subject to change based on additional analysis including field assessments to be conducted by an engineer contracted by EBCE.

Table 1. Hayward Facilities Under Consideration for Phase 1

Police North District Office	22701 Main St
Police Department	300 West Winton Av
Fire Station # 1	22700 Main St
Fire Station # 7	28270 Huntwood Av
Fire Station # 9	24912 Second St
Airport	22301 Skywest Dr
Corporation Yard	24505 Soto Rd
Cinema Place Parking Structure	22695 Foothill Blvd

The above sites are those with the fewest known challenges. This Phase I site portfolio has also been evaluated by EBCE for cost effectiveness over the life of the projects. Additional municipal facilities are being evaluated for future phases and may include solar-only

installations. City facilities that already have solar will be considered for the addition of battery storage in a later phase of the project.

EBCE will hire an independent engineer to complete a structural, roof condition and electrical capacity assessments of critical facilities currently on the Phase I procurement list. The analyses will identify sites that may need costly upgrades to sustain solar and battery energy storage systems and eliminate them from the Phase I procurement portfolio. They could however be included in future procurement rounds as budget for necessary upgrades are identified. This step will enable EBCE to identify the most technically viable and cost-effective portfolio of buildings for solar and battery energy storage systems. EBCE will cover the upfront cost of these analyses, which will be paid back as part of the agreed-upon PPA rate on utility bills.

The City facilities would be able to utilize the solar and storage both on a daily basis and in the case of a grid outage. The equipment will be owned, operated, and maintained by the third-party PPA provider under its contract with EBCE. The terms of the PPA will be agreed upon by the City and EBCE prior to EBCE issuing an RFP for a PPA provider. EBCE plans to release the RFP on behalf of its governmental partners in mid-to-late 2021. EBCE would be the counterparty on the PPA, holding the contract with the vendor and a PPA contract with each individual participating local government. The goal of deployment of the systems is late 2021 to early 2022.

Participation in this project will help make Hayward's municipal facilities resilient, safe, connected, and a prepared community. Specific benefits of this project will include:

- An EBCE analysis to determine the feasible capacity of solar and battery energy storage systems at critical municipal facilities.
- An independent engineering assessment and cost estimate of potential structural, roof condition and electrical capacity upgrades necessary to advance project deployment.
- A streamlined procurement process, where EBCE acts as the counterparty to the PPA on behalf of its JPA member local government, including the City of Hayward. This innovative pilot procurement model is designed to lower risk and costs for industry vendors and participating cities.
- Enhanced community resilience through solar and battery energy storage systems at critical municipal facilities with no capital costs for installation.
- Operation and maintenance contracts for the solar and battery energy storage systems wrapped into the PPA.
- Daily building energy load management from solar and battery energy storage system to help balance time-of-use charges.

ECONOMIC IMPACT

The Solar & Storage project is not expected to have a significant impact on the local economy; however, it is EBCE's practice to utilize local union and/or prevailing wage labor for its contracts.

FISCAL IMPACT

The City's participation in this project does not have any fiscal impacts at this time. It does however commit the City, utilizing already budgeted staff time, to continue to pursue procurement for Solar + Storage through a PPA with EBCE. With a PPA model, a PPA provider pays for the installation, operations and maintenance of the solar and battery energy storage systems, and the City pays an agreed upon price per kilowatt-hour (kWh) for power generated. Under a PPA, the overall cost of the project is reduced as the provider can receive tax benefits not available to public agencies. While Solar + Storage systems cost more than solar only systems, according to EBCE's preliminary analysis, the projects under consideration are cost effective and are expected to be cost neutral to the City.

STRATEGIC ROADMAP

This agenda item relates to the Strategic Priority of Combat Climate Change, but does not relate directly to a project identified in the Roadmap.

SUSTAINABILITY FEATURES

Increasing solar and battery energy storage system deployment supports Hayward's long term GHG reduction goals and other General Plan policies. On a day-to-day basis, the onsite solar will reduce GHG emissions and batteries will shift energy usage from peak times, thereby reducing the need for gas-fired power plants to come online to meet demand. During power outages, the solar and battery energy storage systems will increase community resilience and lessen the need for dirty diesel generators for back-up power.

PUBLIC CONTACT

No public contact has been made for this project.

NEXT STEPS

Staff plans to work with EBCE and their engineer to complete detailed assessments of the facilities under consideration. Staff will also work with EBCE to develop a Power Purchase Agreement and project details for each facility. Staff will return to the CSC later this year to request a recommendation to Council.

Prepared by: Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:

A handwritten signature in black ink, appearing to read 'K. McAdoo', written in a cursive style.

Kelly McAdoo, City Manager