June 20, 2018

East Bay Community Energy
1111 Broadway, 3rd Floor
Oakland, CA 94607
Via Email Submission to LDBPcomments@ebce.org

RE: Comments on East Bay Community Energy's Draft Local Development Business Plan

The California Solar & Storage Association (CALSSA) appreciates the opportunity to submit comments on East Bay Community Energy's (EBCE) Draft Local Development Business Plan. In general, CALSSA strongly supports the draft plan as a bold forward-looking vision for achieving local clean energy, promoting business development, safeguarding the environment and keeping rates reasonable.

I. Introduction

The California Solar & Storage Association is a trade association of 500 businesses involved in the local solar and storage industry in California, including 52 businesses located in EBCE Territory. Our membership comprises installers, manufacturers, financers, consultants, and others. We represent companies on policy matters and assist with common business development opportunities.

The California Solar & Storage Association supports EBCE's intention to use distributed energy resources to provide for EBCE's energy needs as it develops its Community Choice Aggregation (CCA) service. In particular, the commitment to local solar and storage as dynamic grid-beneficial tools is a forward-looking vision for how energy use will look in the future. This vision will be beneficial for the community and for the grid. EBCE also has a unique opportunity to guide and support customer choice and we support the goals within this proposal that allow for customer generation.

II. Enhanced Net Energy Metering (NEM) Program

a. CALSSA Supports EBCE's Enhanced NEM Program

The California Solar & Storage Association strongly supports EBCE's proposal to offer an enhanced NEM program at the start of customer operations. As noted in the plan, offering a robust NEM program will ensure a positive customer experience and minimize the number of customers who opt out of EBCE service.

In addition, offering NEM with the proposed enhancements will allow for the continued development of local renewable energy, constructed in the built environment by local workers with direct bill savings be EBCE customers. Relying on bill savings to drive customer investment in local solar and storage resources fosters clean energy development without encumbering EBCE with long-term financial liabilities.

Given that solar generation lines up fairly well with EBCE's peak load,[1] relying on local customer generation is an ideal way to meet energy demand in EBCE territory while minimizing financial risk and opt out risk to EBCE. Below, we discuss some of the specific features of EBCE's NEM proposal.

[1] As shown in figure 8 of the Draft LDBP, p. 13

b. **Financial Value Adders**

CALSSA supports the proposal to include value adders for various NEM project attributes and congratulates EBCE for a creative and thoughtful approach to advancing several policy goals. The Community Benefits Adder (Category 1) is a sensible means to increase benefits for disadvantaged members of EBCE's territories and providing a boost to local government institutions that do not get the benefit of the federal investment tax credit (ITC). Likewise, the workforce adder is an equitable way of providing an advantage for companies that pay prevailing wage without mandating any particular wage standards. CALSSA recommends adoption of both of these adders in the final plan.

On Category 3, Supply-shift Adders, CALSSA supports the $0.005/kWh adder for west-facing solar, as this adder provides an incentive for systems that better align with EBCE's load curve and compensates owners of those systems for reduced energy output.

While CALSSA also supports incentives for adding energy storage to NEM systems, we encourage EBCE to explore means other than the proposed $0.005/kWh export adder to incentivize those systems. There are several technical, economic and policy reasons why an export adder might not be the best means of promoting customer adoption and beneficial operation of storage devices, including:

- When paired with behind-the-meter (BTM) solar and time-of-use (TOU) rates, most battery storage systems would be operated in a manner that maximizes self-consumption and minimizes the amount of energy sent to the grid. Thus, there may be very little exported energy on which the export adder could be applied. This is especially true for storage systems that are relatively small relative to customer load;
- California has imposed limits on the amount of energy that is sent to the grid from BTM batteries paired with NEM solar systems.[2] A CCA policy that compensates storage owners for NEM energy exported to the grid could conflict with policies limiting those exports;
- Determining what energy was sent to the grid from the storage device versus the solar PV array could require complex metering arrangements;
- During periods of high energy demand, the benefits of battery discharge to a utility or CCA are equivalent regardless of whether that discharge reduces customer load (i.e. does not export), or sends energy to the grid. It is somewhat arbitrary to compensate a customer for battery discharge only in the latter instance, but not the former;
- The primary value to a utility of BTM storage systems is dispatchable capacity, which reduces the cost to the utility of purchasing such capacity to meet peak loads. This benefit exists regardless of whether or not the battery is actually discharged. The energy that is provided during a discharge event is a secondary benefit. Thus, it might make more sense to compensate battery storage owners via a monthly capacity payment that requires the battery to be fully charged during certain times, rather than an energy credit that is paid only when the device is actually discharged.

c. **Additional Details of Proposed NEM Program**

CALSSA appreciates and agrees with the recommendations for additional NEM program features. In particular, the proposal to "cash-out" NEM customers for credits that have been accrued over the course of the year is likely to foster a sense of fairness among customers and minimize complaints that excess credits have been unjustly lost. We also appreciate EBCE's thoughtful approach of onboarding NEM customers to avoid true-up timing mistakes.

[2] For example, see CPUC Decision (D.) 16-04-020, as modified by D. 18-02-008

III. Solar Siting Survey

CALSSA applauds EBCE for proactively undertaking a solar siting survey in order to identify locations where siting solar in the built environment will provide the highest value. Having local utilities that engage in proactive initiatives that advance the state's clean energy goals is one of the fundamental reasons the CCA policy was initially created, and we are pleased to see EBCE undertake these types of projects.

IV. Energy Storage Contracting Strategy

CALSSA agrees that deployment of energy storage systems can insulate EBCE from wholesale market risk, flatten load curves, reduce portfolio carbon intensity, provide resilience, stabilize revenues and drive operational cost savings. In addition, storage systems located behind the customer meter can leverage customer benefits (like TOU management and reliability) to deploy aggregated generation capacity with minimal upfront capital investment from EBCE.

The Virtual Power Plant (VPP) concept mentioned in the draft LDBP has significant potential to realizing these benefits. As a newly created CCA, EBCE has the opportunity to advance this concept to an operational stage that has not yet been reached in California. One of the reasons why the VPP concept using BTM battery storage has yet to succeed in California is that CA policies generally treat BTM batteries as "demand response" assets, subject to rules, performance measurement and other requirements that were established for DR programs but that do not work well for energy storage.

For example, in the Demand Response Auction Mechanism – the IOU program that most closely matches the VPP concept – exports from the battery to the grid are not counted for energy or capacity payments. This rule effectively prohibits participation for solar-paired batteries, which make up a significant portion of BTM batteries deployed. In addition, it makes it difficult for an aggregator to predict how much storage capacity is available for dispatch at any given time.

Thus, we encourage EBCE to explore the creation of a VPP program or tariff that recognizes the unique attributes of battery storage, including the ability to measure battery performance separately from building load, which alleviates the need to rely solely on inaccurate baseline measurement. Such a program could provide guidance to other CCAs and state policymakers as they move toward greater reliance on BTM battery storage to replace fossil plants in dense urban areas.

V. Decarbonization of Buildings and Transportation Sector

In the draft LDBP, EBCE notes the many benefits of decarbonization, such as reducing natural gas use, and fully electrifying our buildings and our transportation sector. CALSSA encourages EBCE to widely deploy solar water heating technologies for water and space heating as a strategy to meeting the goal of decarbonization of the homes and buildings in EBCE territory. According to a National Renewable Energy Lab analysis, solar water heating is the best available technology for reducing the greenhouse gas (GHG) impacts of heating water.[3] Solar water heating can reduce a significant portion of energy use for heating water -- 50% to 80% for an average residential solar heating system. This can reduce use of natural gas immediately before electrifying the entire building, and it will also reduce the energy use of an all-electric building. Solar water heating is versatile and is paired with a back-up source of hot water such as tankless gas backup, heat pump water heaters, or flexible electric water heaters. Further, in addition to exploring efficient electric technologies like heat pump water heaters, CALSSA encourages EBCE to explore electric devices that can be operated flexibly to maximize

[3] Table from Jeff Maguire and Tim Merrigan, National Renewable Energy Lab, March 10, 2016; included as an Appendix.

their use of daytime solar energy and mitigate customer exposure to time of use rates. For example, many types of electric water heaters now come with controllers that can use the thermal storage capabilities of the water tank to help store daytime renewable energy.

Finally, CALSSA supports and appreciates EBCE's inclusion of transportation electrification in the LDBP. As with building electrification, electrifying the transportation sector can be beneficial for EBCE by reducing GHG emissions and local pollution, and helping integrate greater quantities of renewable energy to meet the increased electrical demand for charging electric vehicles. Since most vehicles spend the majority of their time parked, EV charging is a highly flexible form of electric load that can help integrated renewable energy into the grid. As EBCE moves forward with its Integrated Data Platform[4] and Solar Siting Survey,[5] it appears that there may be an opportunity to use daytime EV charging at workplaces or business to alleviate areas of the grid where solar penetration has reached the limit of distribution circuit capacity. Such a project could provide valuable information for state policymakers and other utilities facing similar issues.

VI. Conclusion

CALSSA greatly appreciates the hard work, public engagement and innovating thinking EBCE has put into development of the draft plan. While there are some issues yet to be ironed out, such as the request for proposals process for the proposed direct access contracting pilot, the plan as a whole represents an intelligent and realistic approach to serving EBCE's customers in a cost-effective manner, while meeting the economic and environmental goals that are important to the communities EBCE serves. We look forward to continued collaboration.

By: /s/ *Kelly Knutsen*
Kelly Knutsen

Kelly Knutsen, Ph.D.
Director of Technology Advancement
California Solar & Storage Association
426 17th St #700
Oakland, CA 94612
Telephone: (510) 548-2312
Email: kelly@calssa.org

[4] LDBP, p. 33 - 35
[5] LDBP, p. 37

Appendix

What is the best available technology for reducing the **greenhouse gas** (GHG) impacts of heating water?

	Sacramento		San Jose		Los Angeles	
Annual	Source Energy Use (MMBTU)	GHG Impact (kg CO2 equivalent)	Source Energy Use	GHG Impact (kg CO2 equivalent	Source Energy Use	GHG Impact (kg CO2 equivalent
SWH – tankless gas backup	6	294	5	281	4	226
SWH – gas tank backup	6	332	6	311	4	237
HPWH with PV	12	440	12	450	10	356
SWH – electric tank backup	13	486	13	486	13	486
Heat pump water heater	17	628	16	605	13	497
Electric resistance with PV	22	811	22	835	20	769
Gas WH - Tankless	13	761	13	770	13	734
Gas WH – Storage tank	18	1068	18	1073	17	1022
Electric resistance tank	32	1203	32	1216	31	1157

1. Solar water heaters
    - Gas backup – tankless
    - Gas backup – tank
2. Heat pump water heaters with grid-tied PV
3. Solar water heaters
    - Electric resistance backup
4. Heat pump water heaters (in homes where the HPWH is installed in an unconditioned garage)
5. Electric resistance water heaters with PV
6. Natural gas water heaters
    - Tankless
    - Tank
7. Electric resistance water heaters