VALLEY CLEAN ENERGY ALLIANCE

Staff Report – Item 8

TO: Community Advisory Committee

FROM: Gordon Samuel, Assistant General Manager & Director of Power Services
Alisa Lembke, Board Clerk/Administrative Analyst

SUBJECT: 2022 Energy Resilience Task Group Charge – work plan/tasks.

DATE: March 24, 2022

At the CAC's February 24, 2022 meeting, an Energy Resilience Task Group (ERTG) was formed along with the concept and preliminary charge agreed upon. In addition, the task group members and Staff were asked to develop work plan/tasks and provide the final draft Charge to the CAC. Attached is the final draft Charge (see tasks listed on page 2) for the CAC's approval.

Attachment:

1. Final draft Energy Resilience Task Group Charge

VALLEY CLEAN ENERGY
COMMUNITY ADVISORY COMMITTEE

2022 ENERGY RESILIENCE TASK GROUP CHARGE

Members: Lorenzo Kristov
Gerry Braun

Staff Lead: Gordon Samuel

Concept: Form a Task Group (TG) to consider practical ways that VCE can work with its member jurisdictions and other local collaborators to address imminent challenges related to climate disruption. The TG would focus initially on how VCE could contribute to building local energy resilience, i.e., the capability to maintain electric service for essential community needs and functions during planned and unplanned power system outages.

2022 Charge: Work with VCE staff and other potential collaborators to develop specific ideas and initiatives for providing energy resilience benefits for Yolo County people and communities while maintaining VCE's financial health and core responsibilities.

Scope/Tasks: To support the above Charge on local energy resilience and the ability to maintain electric service during grid outages, the task group will focus on microgrids. A microgrid is a local electricity system that can operate both in grid-connected mode and in "islanded" mode independent of the grid. The TG would narrow the scope to focus on "clean energy" microgrids, that is, ones comprised of renewable generation, energy storage, bi-directional EV charging and demand management controls, and that do not use fossil fuel resources.

There are two main types of microgrids. **(1) Single-facility microgrids** have a single point of connection to the utility grid, like a college campus, office park or single building. **(2) Multi-customer microgrids** serve several customers, buildings and energy resources each having a separate point of connection to the utility grid. To operate in islanded mode type (2) must use the utility's distribution wires to move power from the generation and storage resources to the customers.

The TG proposes to focus on type (1) for 2022. Existing statutory and regulatory rules make type (2) very challenging if not impossible. This situation could change as many advocates are working to change the rules, but that's at least a few years in the future. Meanwhile, type (1) can provide much needed local benefits as a community "resilience hub" during grid outages and as a 24x365 source of clean energy during normal conditions.

Given the above considerations, the TG reviewed the recent announcement by Marin Clean Energy (MCE) and the Pittsburg USD to install battery storage on 10 schools that already have rooftop solar, to turn those schools into community resilience hubs. (https://www.mcecleanenergy.org/mce-news/1-6-megawatts-of-energy-storage-coming-to-pittsburg-unified-school-district/). There are other reasons why schools would be desirable locations for community energy resilience hubs — see Attachment 1 "Resilient Clean Energy Schools" (RCES) proposal — and therefore the TG proposes to identify a school in the VCE service area for implementation of a type (1) microgrid.

The TG proposes the following tasks for 2022:

1. Develop a draft local energy resilience vision for VCE, to provide a context for energy resilience efforts that can serve as a guidance document for the next several years. Aim for CAC adoption by end of 2022 for recommendation to VCE Board.
2. Identify a specific school in VCE service area for definition and implementation of a resilience hub. In collaboration with relevant partners (e.g., school board or administrator, company having microgrid deployment experience) develop an implementation plan in the form of a "shovel-ready" project description that can be submitted for funding. Aim for complete project plan by end of 2022.
3. Work with other CCAs and CalCCA to explore advancing RCES as a statewide program and collaboratively develop a strategy for advocacy.

Strategic Plan: **Goal 4. Promote and deploy local decarbonization and grid innovation programs to improve grid stability, reliability, community energy resilience, and safety.**

4.1 Objective: Working with a variety of local, regional and state partners, develop a grid innovation roadmap for VCE's service territory that supports community energy resilience and reliability.

4.2 Objective: Develop a VCE decarbonization roadmap to guide near and long-term program decisions and offerings.

PROVIDED BY LORENZO KRISTOV

Attachment 1

Resilient Clean-Energy Schools

A recent press release from MCE unveiled their project to install battery storage on 10 schools in the Pittsburg CA USD.[1] The total of 1.6 MW / 3 MWh of storage will work in conjunction with the solar panels already on these schools to create resilient clean-energy microgrids, enabling the schools to have continuous fossil-free electricity service during grid outages, to serve as resilience hubs for their communities in addition to maintaining their core school functions.

Proposal: Create a statewide campaign to replicate this model on 2500 schools across the state.[2] The campaign would be aimed at the Legislature, Governor and relevant state agencies. It would seek to educate and engage the public and the entire energy industry through mass media, trade press, webinars, etc. It could be framed for legislation or a ballot initiative.

The RCES model: Install battery storage, bi-directional EV charging and microgrid control systems to work in conjunction with solar PV systems. The system will be able to sustain electricity service during grid outages for multiple days by charging the batteries from the on-site solar panels. The integrated EV charging stations will have sufficient capacity to charge EV school buses to support conversion of school bus fleets.

Benefits of RCES systems:

1. Substantial reduction or even elimination of school energy costs, even with electrification of school buses and other school systems such as heating
2. Continuous fossil-free power supply during utility grid outages, to serve as resilience hubs for their communities
3. Making schools ready with necessary charging infrastructure for EV buses
4. Ability to smooth each school's 24-hour net load profile on the utility grid to prevent any adverse grid impacts and minimize need for grid infrastructure upgrades
5. RCES systems can be the subject of clean-energy curricula at the schools, to prepare students to participate in the clean-energy economy
6. Reduction in GHG emissions in all school districts in the state, with attendant local health benefits
7. Boost to California clean-energy jobs and economy
8. A statewide program ensures that no communities are left behind. Some don't.

Next steps:

- Begin to identify and recruit potential supporters and plan the statewide campaign

Explore options for campaign leadership and funding

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[1] https://www.mcecleanenergy.org/wp-content/uploads/2022/02/MCE-1.6-Megawatts-of-Energy-Storage-Coming-to-Pittsburg-Unified-School-District.pdf

[2] 2500 schools in California already have solar panels due to Prop 39 funding which was passed as a ballot initiative several years ago. Only about 250 of these schools also have battery storage already.