SmartGridToday

California helps disadvantaged community lead world

May 19, 2020

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Blockchain-based energy model to be Earth's largest

A California consortium will deploy an innovative and versatile energy model to provide affordable, locally produced renewable energy and energy services at scale within a disadvantaged community using blockchain, the Energy Coalition said yesterday. The coalition teamed with Community Electricity and others such as UCLA and won a $9 million California Energy Commission (CEC) grant for the project which started planning in 2016, it added.

The Basset-Avocado Advanced Energy Community (BAAEC) will host the project which is to start being built next month with the target of completion by 2023, the coalition said. The group hopes the model being used will support communities highly affected by the COVID-19 crisis by introducing a feasible and concrete protocol to decarbonize and improve the overall health of the community.

Additional partners in the prototype build-out include ACLIMA, Ampere Energy, Enel X, Google, Green Commuter/EVShare, Grid Alternatives, IOT Sensorcom, Purple Air, Solarays, Sonnen, Space AI, StrongBlock, Tetra Innovations Group, Tritium, and Winn Energy Control, it added.

The grant came from the CEC's Electric Program Investment Charge (EPIC) grant program and for both phases together will be close to $20 million including partner matching funds. BAAEC is a 28,000-resident community and will serve enrolled participants using a complex system comprised of seven components:

- A digital application to engage and guide community members towards decarbonization, that it called "people first;"
- A smart community solar-and-storage system to offset annual electricity load;
- A campus microgrid resilience hub to provide clean back-up power to the community in emergencies, severe heat days, or blackouts;
- A prosumer network and virtual power plant integrating 50 single-family homes equipped with solar PV and battery storage to demonstrate a blockchain community network pilot;
- A mobile grid that includes a community-operated EV vanpooling service and a network of fast EV charging stations to decrease the use of fossil-fuel vehicles, reduce carbon emissions, and improve air quality;
- An indoor-outdoor smart pollution sensor network including an IOT-based NOx (oxides of nitrogen) emissions monitoring system to measure and improve emissions from fossil fuel vehicles still operating within the community; and
- A mobile living lab to periodically perform rounds throughout the community, measuring and reporting real-time decarbonization impact, the group said.

The design of the prototype began as phase one in 2016 and phase two is expected to start implementation next month, targeting completion by 2023, it added.

"California's disadvantaged communities and the cap-and-trade money allocation across these vulnerable communities give rise to the perfect formula to design a feasible community-scale decarbonization strategy," said Community Electricity CEO Luis Felipe Cano in prepared remarks. "Our data-driven decarbonization protocol – a new social and economic community system – is designed to empower community members with multiple options towards clean electrification resulting in collective gains, including quality-of-life improvement and economic benefits derived from the sale of locally produced electricity and carbon credits.

"The motivation and potential are huge. Approximately 2,000 similar disadvantaged communities could benefit from this protocol inside California, and even more when we replicate the formula outside the state," he added. "We are excited to be part of the co-development of this multi-asset, community-scale prototype using a blockchain backbone, making this advanced energy community the biggest and most versatile in the world when built out."

The Energy Coalition is a California-based nonprofit with over 45 years of experience designing and implementing programs and strategies that transform energy use and empower communities to take action, the group said. By bringing ideas, technology, and expertise to public agencies, businesses, educators, policy makers, and others, it is creating the building blocks for a new energy economy in which communities become energy-producing networks and clean energy becomes affordable and accessible for everyone, it added.

Community Electricity is a Los Angeles-based advanced electricity community developer that designs, finances, develops, and manages self-sufficient electricity communities. It specializes in upgrading existing communities and co-developing new ones, it added.