Scaling Solar+ for Small and Medium Commercial Buildings

Project Snapshot

Accommodating future growth in distributed solar power will require **integration in deployment and operations between solar PV, batteries, and controllable loads ("Solar+")** to meet grid needs while maximizing the value to ratepayers and host sites. Small to medium size commercial buildings (SMB) are a prime target but are too small to justify the custom engineering typically necessary for conventional microgrids that enable Solar+ installations. We are developing a set of currently-missing hardware and software elements to enable multiple-vendor, interoperable Solar+ operations for SMB. The focus of our pilot is convenience stores with canopy roofs, which have favorable features for a scalable Solar+ value proposition: ubiquitous and uniform infrastructure, high value for resiliency, and large controllable thermal loads in HVAC and refrigeration.

The core team on this project includes:

- Schatz Energy Research Center (research lead, systems integration, microgrid design)
- Lawrence Berkeley National Lab (model-predictive control and building automation)
- Blue Lake Rancheria (site host); Serraga Energy LLC (construction, implementation)

The funding for this project is through California Energy Commission EPIC 16-309 ($1.5 M)

Schedule outline: 2018 → Design (Q1-Q2), build (Q3), and commission (Q4) the pilot.
2019 → Operational testing, market analysis, and synthesis.

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