

EXPANDING ACCESS TO DISTRIBUTED ENERGY RESOURCES VIA COMMUNITY MICROGRIDS

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INTRODUCTION

Background:

The California Energy Commission funded, UC-Berkeley led EcoBlock. The community microgrid is in a designated AB 1550 low-income community within a ½ mile of a SB 535 disadvantaged community. The 25-customer microgrid will include in-home electrification owned by the homeowner and rooftop solar and storage owned by the community. There are 25 properties total on the block. Most are one- and two-story wood-frame construction.

Research Questions:

- Do community microgrids bring resilience, energy and cost savings to low to moderate income households?
- What technical and legal structure brings the most benefits to LMI households?
- How can this model be replicated / scaled?

CONCLUSIONS

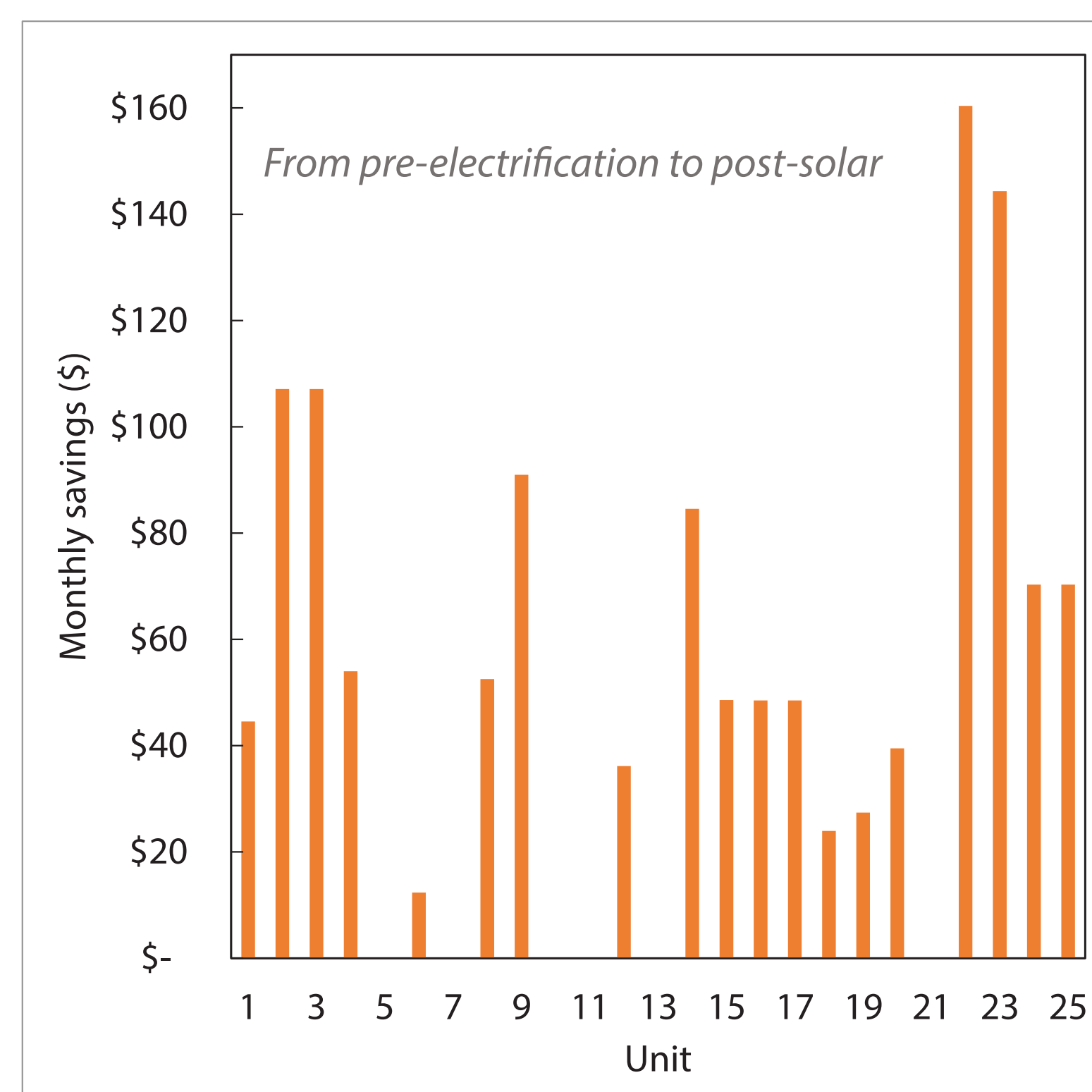
Keys to success to scale EcoBlocks:

- Devise low-cost financing methods to allow communities to self-finance with low transaction costs
- Enable on-bill financing with the utility or a state revolving loan program.
- Bundle financing for community assets and household assets
- Enable microgrid-as-a-service to allow third parties like a non-profit to develop EcoBlocks.
- Secure affordable insurance, which is about 50% of the O&M cost
- Microgrid tariff – reward EcoBlocks for the grid services they provide
- Community buy-in - encourage bottom-up movements
- Prioritize energy efficiency retrofits with attractive return on investment
- Enable rebilling so savings from community assets are equitably redistributed and incentivize energy reduction

METHODS

1. Estimate pre- and post-retrofit loads
2. Estimate the expected solar energy production and battery storage capacity
3. Calculate expected cost savings by homeowner

ESTIMATED MONTHLY SAVINGS



RESULTS

- Most homeowners experience savings, although some (those whose energy costs increase due to electrification) do not
- Two hours of rated peak kW capacity during outage. BESS designed to pick up nonparticipant load if needed.
- O&M costs significantly erode the ROI
- Community microgrids need to capture additional revenue from providing grid services beyond net energy metering

ADDITIONAL RESOURCES / NEXT STEPS

- Construction began Summer 2022
- Exploring additional revenue streams, including a transactive energy market and compensation in wholesale market from central battery
- Expand to new communities - Resilient Palisades



Want an EcoBlock or to get involved?

To learn more visit:
ecoblock.berkeley.edu

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