



EXPANDING ACCESS TO DISTRIBUTED ENERGY RESOURCES VIA COMMUNITY MICROGRIDS

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INTRODUCTION

CONCLUSIONS

Background:

The California Energy Commission funded, UC-Berkeley led EcoBlock. The community microgrid is in a designated AB 1550 low-income community within a $\frac{1}{2}$ 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?

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 nonprofit 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

RESULTS

ESTIMATED MONTHLY SAVINGS



- 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

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



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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

 selection, and in-home retrofits. EcoBlock neighbor Nick Corlett shares his experiences as a 	IMAGE CREDIT: ANNA HAEFELE Working together: The Association enables EcoBlock participants to coordinate payment for power usage and grid maintenance.	Or contact:
solar PV owner. (pg. 2) • Paying for EcoBlock: how will	General announcements	
your annual costs and savings change during and after the in- home retrofits and microgrid	All participants: Homeowners & Renters All Homeowners	Michael Ginsberg
installation? (pg. 4-6) Did you know: Karl the Fog was	 Share your thoughts on efficient home upgrades and receive \$25! On September 5, the newly-formed Blossom St. Association held its first 	mender emboerg
named after a character in the	If you haven't had a chance to take meeting of the Board of Directors	
film <i>Big Fish</i> ? Learn more about the Bay's iconic resident. (pg. 8)	the Lawrence Berkeley National (the volunteer Steering Committee). Laboratory (LBNL) survey, you can They elected the first Board: Nora	mginsberg@bowman.com
th appreciation,	visit <u>bit.ly/lblecoblock</u> and share Scully as Chair, Vivian Pacheco	<u>Ingrisoci g@oovinan.com</u>
Sascha von Meier	feedbackonhowyourhomeasViceChair,NickCorlettasimprovement decisions impact yourSecretary, and JesseHassinger as	
Principal Investigator vonmeier@berkeley.edu	energy use. Treasurer. Stay tuned for next steps!	
		or
Therese Peffer Project Manager	Upcoming events	
tpeffer@berkeley.edu	In-person block meeting City of Oakland Bulky Block Party	
Cathy Leonard	Sunday, 9/19 • 4-5:30 pm Saturday, 9/24 • 9 am-1 pm	Kata Dinanaca
Community Liaison* cleonardecoblock@gmail.com	Please join us at the Sausal Creek end Oakland residents: safely dispose of of the block as we go over microgrid any large, unwanted items for free at	Kate Ringness
(510) 927-1574 *Primary contact	design updates, appliance selection, a City facility at 7101 Edgewater Drive.	J
Primary contact	and in-home retrofits. Visit <u>bit.ly/bulkyblockparty</u> for details.	
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