

# The Oakland EcoBlock

Presentation to the Berkeley Lab Community Advisory Group

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Alexandra “Sascha” von Meier

Adjunct Professor, Dept. of Electrical Engineering and Computer Science, UC Berkeley

Director, Electric Grid Research, California Institute for Energy and Environment (CIEE)

Faculty Scientist, Grid Integration Group, LBNL

[vonmeier@berkeley.edu](mailto:vonmeier@berkeley.edu)



<https://ecoblock.berkeley.edu/>

# Today's Presentation



- Background about the EcoBlock project and Berkeley Lab's role
- What the Pilot project will actually look like
- Impact that we hope it will have



# EcoBlock: A Multi-Customer Microgrid Solution



## California Energy Commission EPIC project

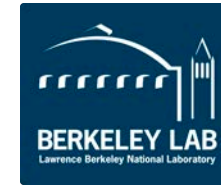
Phase I (2015-2018) \$1.5M + costshare

Phase II (2019-2023) \$5M + costshare



California Institute for  
Energy and Environment

- **Retrofits** of older housing stock on a city block combining deep efficiency with 100% solar microgrid
- Innovative legal, and financial structures for **community ownership and governance**
- Make clean, resilient energy **affordable** for lower and moderate income neighborhoods
- **Scale-up** by adapting and replicating the model



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# Solutions offered by the EcoBlock Model

- Urban resilience in the face of climate change
- Affordability: equitable access to clean energy
- Distribution grid hosting capacity for solar and EVs
- Fuel switching for carbon goals: gas to electric
- Energy and water efficiency made easy
- Model for community management of resources



# The right scale for solving the integrated design problem



## EcoBlock Hypothesis:

The most cost-effective way to drive zero-carbon energy, deep water conservation and resilient urban systems is by addressing components together, on the *block-neighborhood-district scale*.

# CEC Phase I (2015 – 2018)

- Analysis and design plan for a prototype EcoBlock
- Large, multi-disciplinary team assembled
- Phase I Final Report shows how the Oakland EcoBlock can be built and financed
- One “Advanced Energy Communities” project, EcoBlock made it to Phase II



# CEC Phase II Schedule (2019 – 2023)

Project Kickoff: October 2019

Year 1 Final block selection, contracts, on-site assessment, final designs

Year 2 Begin building retrofits, microgrid construction

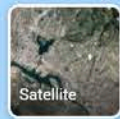
Year 3 Complete construction, begin operation

Year 4 Assess performance, produce EcoBlock Handbook, scaling study





EcoBlock

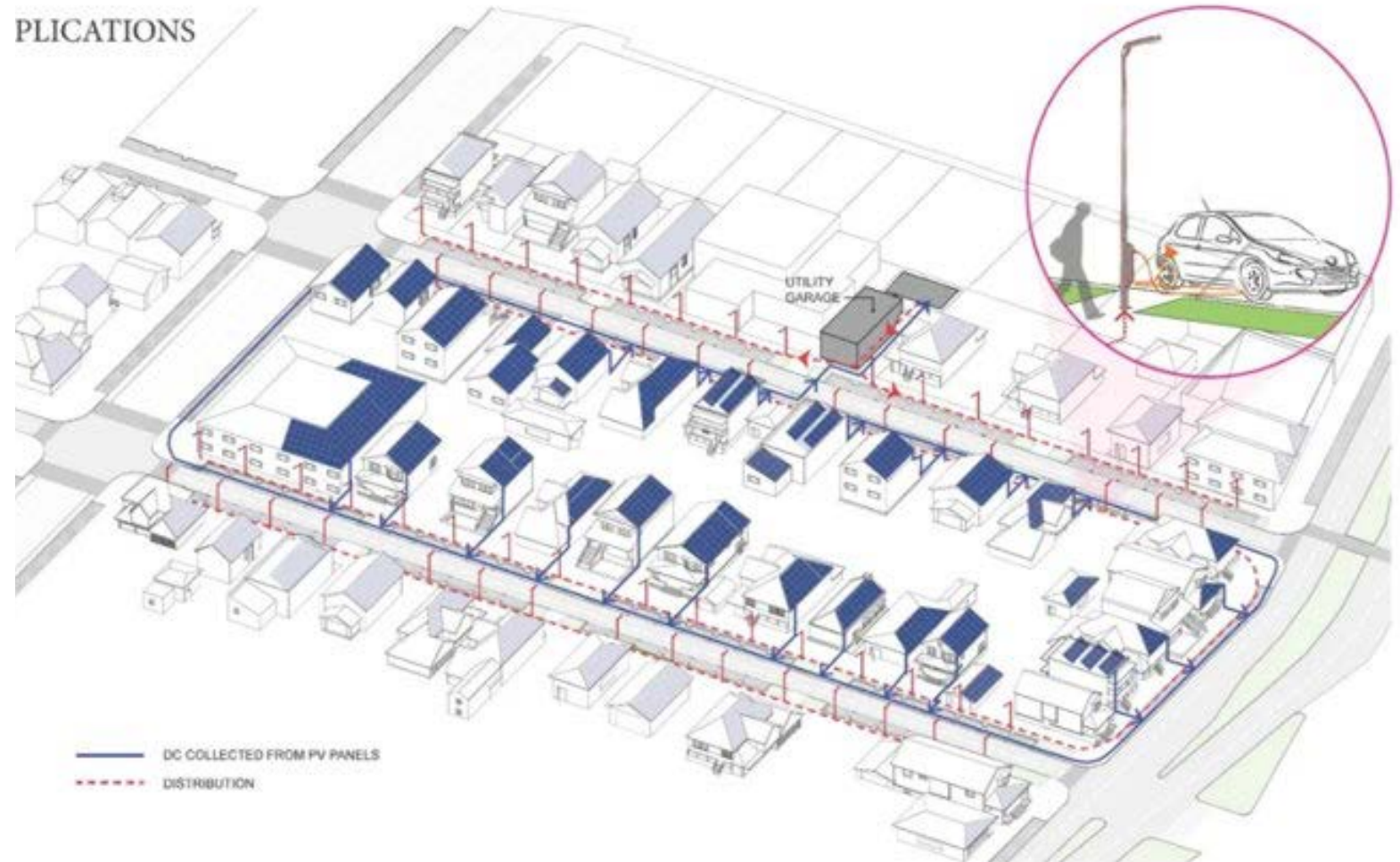




# Microgrid Design

## Electrical system combines Distributed Energy Resources (DER):

- Communal rooftop solar PV
- Communal energy storage system (battery)
- Shared Electric vehicle (EV) charging
- Intelligent loads and electric demand response
- Smart microgrid controls for optimizing technical and economic performance





# Water Management





# Future Vision: EcoBlock Scale-Up



- Build on the Oakland pilot to develop standardized, modular systems
- Study the scaling impacts of EcoBlocks for the electric grid
- Develop a legal, financial and regulatory framework for the process of creating new EcoBlocks

