

# Lessons from California's Advanced Energy Communities

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Convened by:

# Community Microgrids

Provide new opportunities for community empowerment & energy independence

Potential benefits include:

- load flexibility
- Resilience
- reduced emissions
- Cost efficiency
- Community engagement and empowerment

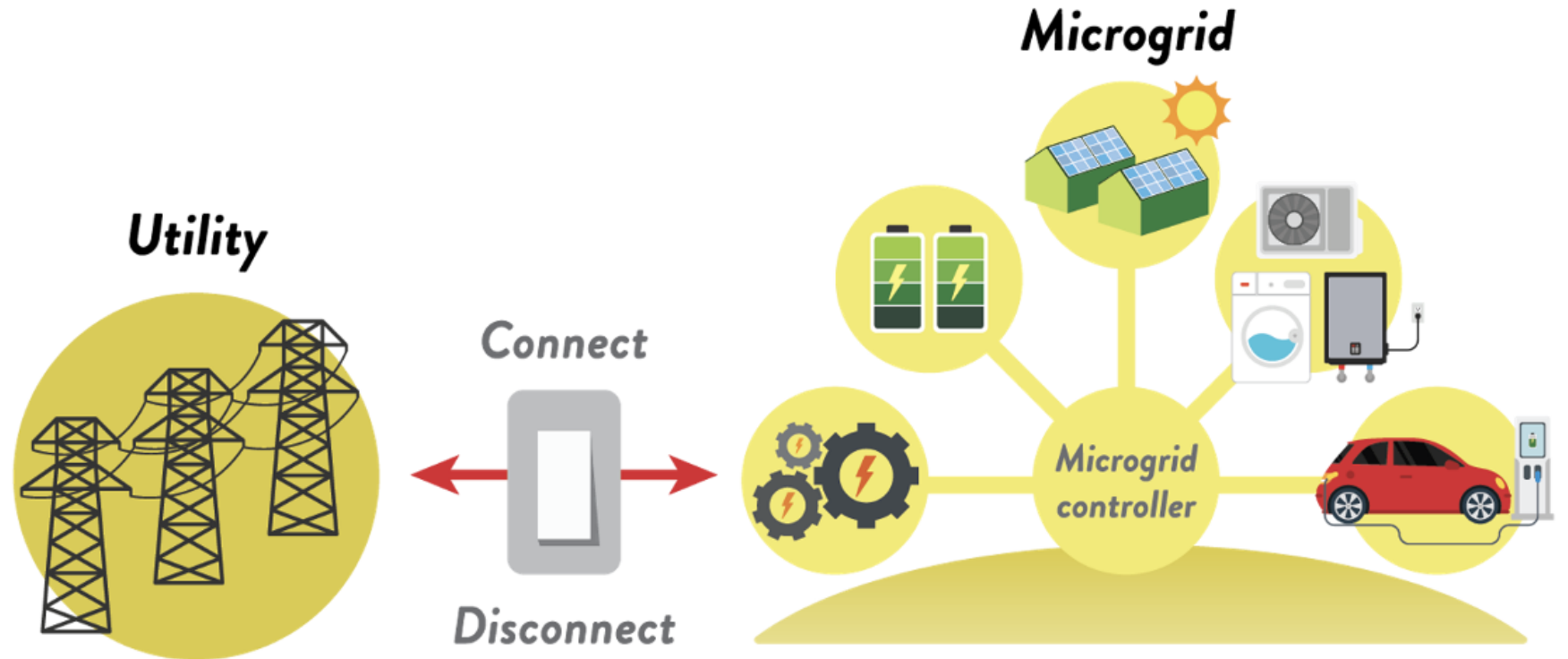


Image credit: Eunice Chung, UC Berkeley



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Are changing the way we produce, distribute, and consume energy

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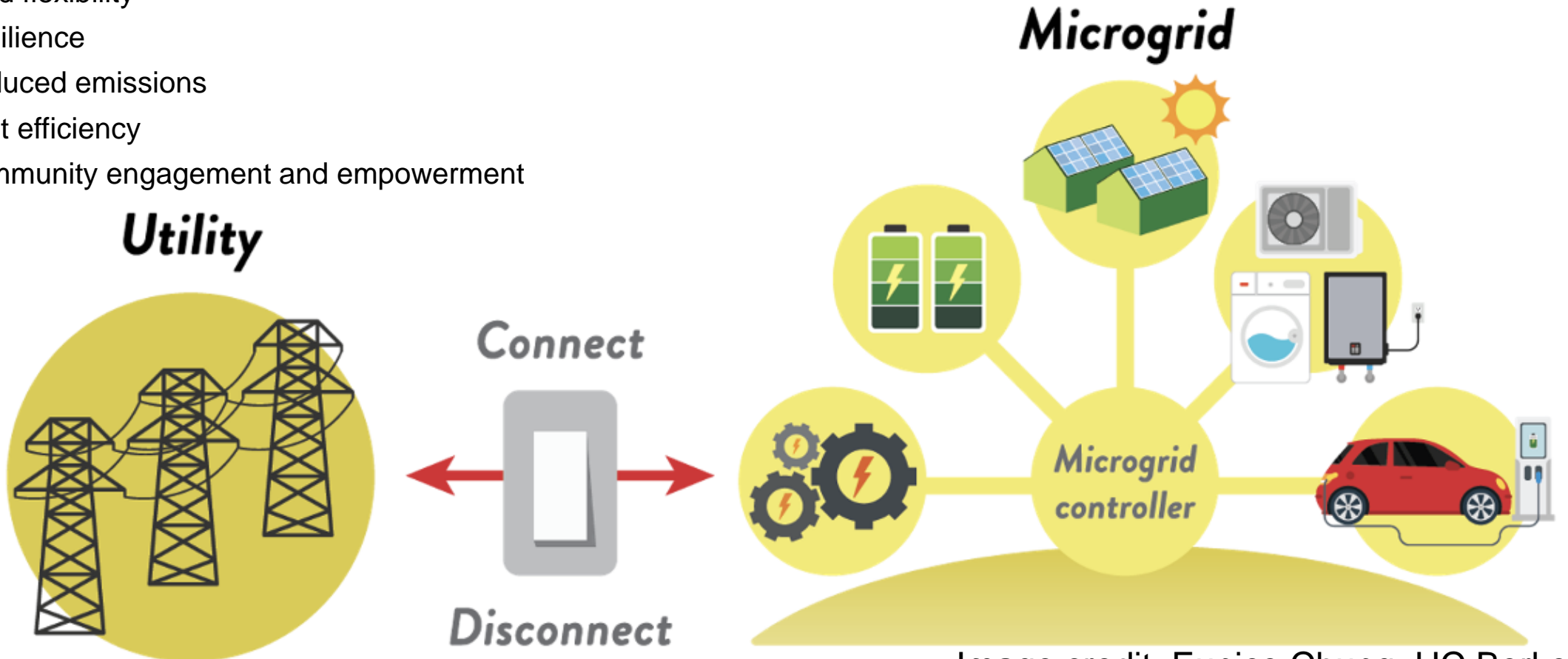


Image credit: Eunice Chung, UC Berkeley



# Advanced Energy Communities (AECs)

## EPIC Grant Award Recipients

- Berkeley Energy Assurance Transformation (BEAT)
- Charge Bliss Advanced Renewable Energy Community
- Biodico's Zero Net Energy Farm (Fresno)
- Santa Monica City Yards Advanced Energy District
- Peninsula Advanced Energy Community (AEC)
- Energize Fresno
- Huntington Beach Advanced Energy Community
- Groundwork San Diego: the Chollas EcoVillage



**Richmond AEC:**  
*Rehabilitate blighted homes to ZNCR status and resell*

**City of Richmond,** Contra Costa County  
**City of Oakland,** Alameda County

**Oakland EcoBlock:**  
*Retrofit a residential block in an existing urban neighborhood connected to a ZNE microgrid*

**Lancaster AEC:**  
*New construction medium-density, affordable housing connected to a ZNE microgrid*

**City of Lancaster,** Los Angeles County  
**San Gabriel Valley,** Los Angeles County

**BAAEC Advanced Homes:**  
*50 homes eligible to enroll in BAAEC's Advanced Homes program; 1.2 megawatt solar installation at the Evergreen Baptist Church*

- Oakland EcoBlock\*
- Lancaster Advanced Energy Community\*
- Richmond Advanced Energy Community\*
- Bassett-Avocado Advanced Energy Community (BAAEC)\*

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# Barriers to Implementation

- **CPUC Code Sec. 218(b).** “over-the-fence” rule: limits the ability of project owners to distribute power to buildings on non-adjacent lines.
- **CPUC Rule No. 2.** California electric rule: allows investor-owned utilities to impose a “cost of ownership” charge on consumers to recover the expenses for new grid infrastructure that supports the customers’ service.
- **CPUC Rule No. 21.** tariff describing interconnection, operating & metering requirements for generation facilities to be connected to utility’s distribution system

Utilities are reluctant to share infrastructure information.

Can’t use existing distribution; City must pay for new ones.

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Utility must operate new lines but City pays utility for O&M.

Can’t create master meter at point of interconnection, don’t value grid services & must pay transmission fees.

**CPUC 218(b)** remains one of the biggest challenges, requiring that any entity selling power to more than two contiguous parcels or across a street be defined a “public utility”



# Case Study: Oakland EcoBlock

## CEC-funded Phase I & II

- Retrofit of older housing stock
- Combines energy efficiency, electrification, solar microgrid, EV car share
- Community financing, ownership & management via nonprofit Association
- Improves local and indoor air quality
- Reduces water costs & runoff



[ecoblock.berkeley.edu](http://ecoblock.berkeley.edu)

Mailing list: [bit.ly/ecoblocksubscribe](https://bit.ly/ecoblocksubscribe)

## Oakland EcoBlock: affordable, clean, resilient energy

Energy efficiency +  
electrification retrofits on  
older urban housing stock

Rooftop solar & central  
battery for a microgrid

Stormwater mitigation &  
water efficiency

Curbside EV charger &  
EV car share

Innovative legal & financial  
structures for community  
ownership & governance

Provide templates and best  
practices for a path to scale

## Multi-customer microgrid retrofit with urban SF/MF

# EcoBlock Community Engagement & Outreach Lessons Learned

- **Set aside a good budget** for talking to and working with the community
- **Get to know the community well.** Keep these relationships strong throughout your project. Find out how people want to hear from you, by text, email, etc.?
- **Really listen to what people say**
- **Build trust throughout**
- **Explain your project in a way everyone can understand.** Don't use jargon or acronyms unless you're talking to other experts. If people speak a different language, have interpreters ready and provide translations.
- Leverage the power of the **peer effect** or **neighbor effect**



Illustration: Thoka Maer



# Lessons Learned: EcoBlock

## Design & Construction:

- Tailor information for different stakeholders.
- Understand benefits and challenges of community electrification.
- Balance costs and quality in heat pump retrofits and construction decisions, be able to communicate

## Urban Planning:

- Navigate permits and local planning
- Build political will and trust with city governance and utilities.
- Involve community in decision-making throughout

## Legal/Regulatory:

- Address laws for community microgrids
- Establish legal entities for microgrid operations
- Consider homeowner changes and various legal aspects

## Business & Finance:

- Assess costs of community ownership for microgrids
- Explore in-house planning to save costs
- Secure low-interest financing and consider electrification impact on low-income areas
- Recognize the influence of community leadership and the “**neighbor effect**” in project success






# Bassett-Avocado Heights Advanced Energy Community (BAAEC)

BAAEC is a holistic energy project featuring:

Advanced Homes, Community Solar, Energy Hub/Resiliency Center and Clean Commuters.

Community empowerment at its core, with youth advocacy, workforce development

## BAAEC Advanced Homes technologies



- Rooftop Solar**  
Solar systems convert the sun's energy to power your home with local, renewable, and clean electricity.
- Induction Stove**  
Stoves that do not rely on natural gas and provided for free by Los Angeles Clean Incubator (LACI)
- Heat Pump Water Heater**  
Get advanced control of your water heating without the fire risks, carbon emissions, and air pollution that come with a gas heater.
- Battery Storage**  
Store extra solar power so you can use it when the sun isn't shining, when electricity prices are high, or in case of a blackout.
- Advanced Homes App**  
Monitor and control your new energy system in our mobile app, and help the BAAEC team lay the groundwork for a future energy marketplace.



Image credit: BAAEC



# Case Study: BAAEC

## Communications and outreach



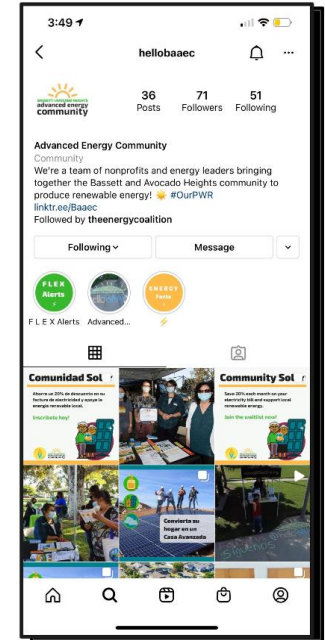
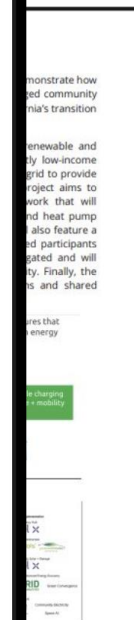
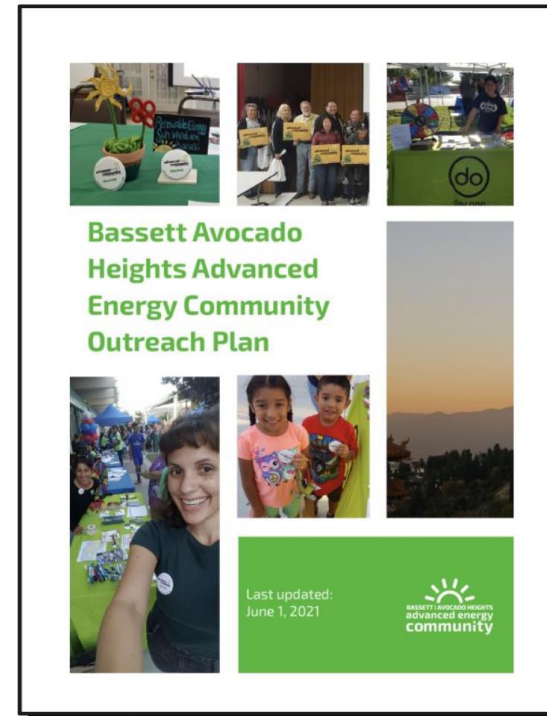
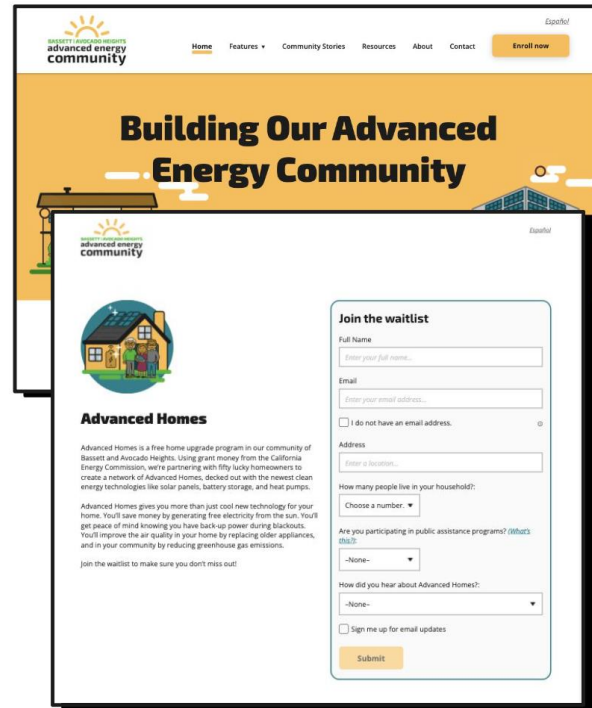
Community Engagement Plan (2020 - Present)

Communication in both **English** and **Spanish** including materials and resources

Presentations, Workshops, Pop-ups, Direct Mailers, Canvassing, and Banners

Partnerships with:

- Community Coalitions and Grassroot Organizations
- Los Angeles County Parks and Recreation
- Bassett Unified School District
- Local Municipalities
- Referrals from residents



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**68**  
Outreach activities completed

**1,000+**  
Community members engaged

**478**  
Residents assessed for eligibility

**8,480**  
Letters mailed to residents

# Barriers and Solutions: BAAEC

<p><b>Distrust of Energy Companies and/or Data Sharing</b></p>	<ul style="list-style-type: none"> <li>• <b>Build relationships with community members</b> through education and outreach</li> <li>• Involvement of CBO's from the outset</li> <li>• <b>Have answers</b> to community members' concerns</li> <li>• <b>Emphasize</b> the <b>no cost</b> aspect</li> <li>• <b>Clearly communicate benefits and participant expectations</b> up front (especially when it comes to energy <b>data</b>)</li> </ul>
<p><b>Lack of Understanding and Opportunities about/for Clean Energy Technologies</b></p>	<ul style="list-style-type: none"> <li>• Provide <b>accessible family-friendly and youth-focused education</b></li> <li>• Provide outreach and materials in <b>multiple languages</b></li> </ul>
<p><b>History of Environmental Inequities</b></p>	<ul style="list-style-type: none"> <li>• Use a <b>framework of environmental justice and equity</b></li> <li>• Communicate the long-term vision, distinguishing <b>the project as a solution</b></li> </ul>
<p><b>Geographic Fluidity of Unincorporated LA County</b></p>	<ul style="list-style-type: none"> <li>• <b>Proactively use BAAEC brand name</b> in all communications</li> <li>• <b>Clearly define eligibility</b> early on all communications</li> </ul>
<p><b>COVID-19</b></p>	<ul style="list-style-type: none"> <li>• Adjust outreach to abide by COVID-19 regulations and guidelines</li> </ul>

Credit: Genaro Bugarin / BAAEC



# Overall lessons learned

- **Community Engagement & Outreach:**
  - Set aside enough funds, showing you value community input & trust
  - Continue building trust by being open and clear in all communications
  - *Really* get to know the local community
  - Explain your projects in simple terms, respect language and cultural differences
- **Information Presentation:**
  - Adjust how you share information based on who you're talking to
  - Be clear about the benefits and challenges of community electrification.
  - Communicate the costs & quality differences in components (e.g. heat pumps)
- **Equity in Decision-Making:**
  - Work closely with energy authorities and follow legal guidelines, especially for projects that affect multiple properties.
  - Involve the community in energy-related decisions, considering how these decisions impact them, particularly in less advantaged areas.
  - Recognize and address community concerns in areas like mobility (e.g., EV charger installations) and water management



# Future looks bright

Neighbors are more aware and interested in climate change mitigation and clean energy

Projects making clean energy accessible to lower income, unrepresented and marginalized, minority and BIPOC communities, and folks who would not have done this themselves

Opportunities to further build community:

- greywater laundry-to-landscape installation
- creating a mural
- sharing an electric vehicle

Opportunities to learn from each other and equitably scale up community energy & empowerment!



# Thank you!

BAAEC: [www.advancedenergycommunity.org](http://www.advancedenergycommunity.org)

EcoBlock: [www.ecoblock.berkeley.edu](http://www.ecoblock.berkeley.edu)

Aczel, M., Peffer, T. Advancing California's Microgrid Communities through Anticipatory Energy Resilience. *Frontiers in Climate*, 5, 1145231. <https://doi.org/10.3389/fclim.2023.1145231>

Barr, Z., Bourassa, N., Bowie, J., Brown, R., DeCuir, N., Diamond, H. J., et al (2019). *Accelerating the deployment of advanced energy communities: The Oakland EcoBlock*. California Energy Commission. Publication Number: CEC-500-2019-043.

CEC (n.d.) Electric Program Investment Charge Program – EPIC. Available online at: <https://www.energy.ca.gov/programs-and-topics/programs/electric-program-investment-charge-epic-program>

