

COMMUNITY CHOICE AGGREGATION AND ENERGY EFFICIENCY: OPPORTUNITIES, CHALLENGES, AND LESSONS LEARNED

Amanda Dewey and
Nick Henner

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About ACEEE

The **American Council for an Energy-Efficient Economy** (ACEEE), a nonprofit research organization, develops policies to reduce energy waste and combat climate change. Its independent analysis advances investments, programs, and behaviors that use energy more effectively and help build an equitable clean energy future.

About the Authors

Amanda Dewey conducts research on local government efforts to adopt and implement equitable clean energy policy. Her areas of research include opportunities for energy efficiency in community choice aggregation programs and the equity implications of local energy efficiency approaches. She also serves as the mayor of the town of Berwyn Heights, Maryland. Prior to joining ACEEE, Amanda worked at the University of Maryland. She earned a bachelor's degree in sociology and theatre from Vanderbilt University and a master's degree and PhD in sociology from the University of Maryland.

Nick Henner conducts research and analysis on clean energy finance strategies, working within ACEEE's state policy program and collaborating with teams across the organization. Before joining ACEEE, Nick worked at the City and County of Honolulu's Office of Climate Change Sustainability and Resiliency, where he focused on energy efficiency and equity projects. Nick held an Environmental Defense Fund Climate Corps Fellowship at Boston Scientific Corp., and he worked on the operations team at Victory Park Capital, a Chicago-based investment management firm. Nick earned a master of science in sustainability management from American University and a bachelor of science in finance from the University of Arizona.

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Glossary

Community choice aggregators (CCAs): Also known as municipal aggregators, CCAs are local government entities that competitively procure electric generation service on behalf of their residents, businesses, and municipal accounts as an alternative to the incumbent utility, while customers still receive transmission, distribution, billing, and perhaps other services from the incumbent utility (EPA 2021).

Investor-owned utilities (IOUs): Investor-owned electric utilities are private utilities formed as taxpaying businesses and owned by shareholders. IOUs are the incumbent utilities throughout much of the United States, often serving customers with an exclusive monopoly license or through limited competition in retail generation service.

Joint powers authority (JPA): This is a public entity established when two or more public agencies by agreement jointly exercise any power common to the contracting agencies (Cassman and Savaree 2002). This typically occurs when more than one city or county collaborate to form a CCA.

Public purpose program: A public purpose program is a part of the delivery charge found on bills that are paid by all IOU and CCA customers. This fixed public good charge, often referred to as an energy efficiency fee, varies from state to state.

Regulated market: This is a market in which retail electricity customers must procure electricity from the legal regulated utility.

Executive Summary

KEY FINDINGS

- Most community choice aggregators (CCAs) nationwide are not yet engaging in energy efficiency, although a handful of initiatives are underway.
- CCAs should consider how they can best leverage energy efficiency opportunities by determining if they should offer their own comprehensive programs, complement existing utility or government programs, and/or connect their customers and contractors to utility programs where they are already providing valuable services to the community.
- By not pursuing energy efficiency in some way, CCAs are missing an opportunity to serve their customers and advance their sustainability, economic, and equity goals.
- To achieve equitable outcomes from energy efficiency programs, CCAs must intentionally target their energy efficiency efforts to advance equity.
- By proactively considering the challenges they may face when incorporating energy efficiency, and by learning from the strategies used by existing programs, CCAs can set themselves up for success when engaging in energy efficiency.

Community choice aggregators (CCAs) are local government entities that competitively procure electric generation service on behalf of their residents, businesses, and municipal accounts as an alternative to the incumbent utility. Under such an arrangement, customers still receive transmission, distribution, billing, and perhaps other services from the incumbent utility.¹ Cities have pursued community choice aggregation as a way to increase the deployment of renewable energy by giving customers options regarding the source of their electric supply. Moreover, aggregation may help cities achieve equitable outcomes from clean energy and create more locally targeted approaches to clean energy deployment. As city staff, elected officials, and community leaders work to maximize the potential benefits of

¹ EPA (Environmental Protection Agency). 2021. "Community Choice Aggregation." www.epa.gov/greenpower/community-choice-aggregation.

aggregation, they also have an opportunity to maximize the role of energy efficiency in a CCA and better position cities to reach their sustainability, equity, and economic objectives.

Energy efficiency can play a key role in reducing greenhouse gas emissions in service of climate goals.² Energy efficiency programs can also support equitable outcomes by reducing energy burdens for low-income households, improving indoor air quality, and training members of marginalized communities for jobs in the energy efficiency workforce.³

This report provides the first view of the landscape of CCA energy efficiency initiatives in the United States and offers recommendations for roles that CCAs can play to support energy efficiency in their local context. No matter the goals that lead a community to form a CCA, energy efficiency can help to advance them.

METHODS

To analyze CCAs in the context of energy efficiency in all states with active CCAs, we conducted interviews with CCA staff members and other stakeholders, collected data from programs, and used publicly available program information. These data allow us to examine the current landscape of energy efficiency approaches deployed by CCAs, challenges and strategies that CCAs face in implementing energy efficiency, the potential for equity in CCA energy efficiency programs, and obstacles to equity that may need to be overcome.

FINDINGS: ENERGY EFFICIENCY OPPORTUNITIES, CHALLENGES, AND RECOMMENDATIONS

Of the CCAs currently operating nationwide, we find that the majority are not currently offering energy efficiency programs directly. Most CCAs are either connecting their customers to existing programs through utilities or not engaging with energy efficiency at all. While CCA programs are too new to provide rigorous quantitative comparisons of CCA program and utility program effectiveness, CCAs have unique opportunities to reach their customers and can embrace the particular additional value that they can bring to energy

² IEA (International Energy Agency), *Net Zero by 2050. A Roadmap for the Global Energy Sector* (Paris: International Energy Agency, 2021).

³ A. Dreihobl, L. Ross, and R. Ayala, *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States* (Washington, DC: ACEEE, 2020). www.aceee.org/research-report/u2006.

efficiency. Our findings allow us to summarize guiding questions for CCAs in determining their approach, as shown in figure ES-1.

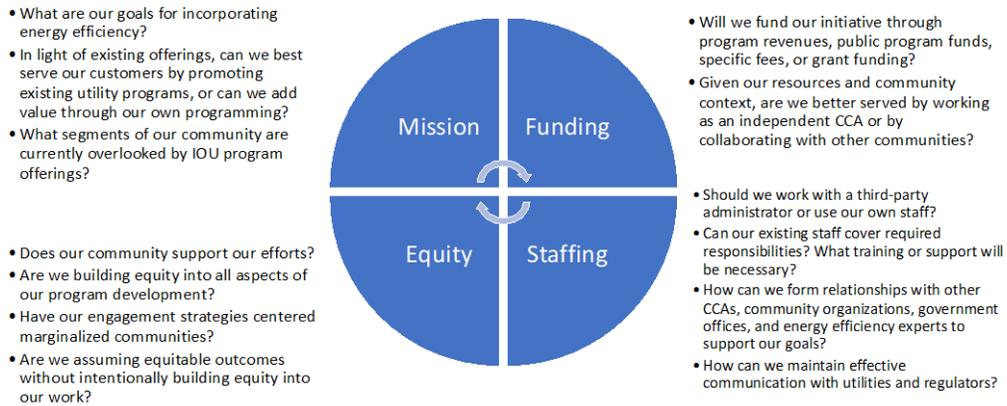


Figure ES-1. Guiding energy efficiency questions for CCAs

CCAs may be able to enhance existing efforts by targeting hard-to-reach customers and leveraging existing relationships within their community through the local government. All CCAs can engage in energy efficiency in some way. Some CCAs directly offer programs that include installation of energy efficiency measures, rebates, and provision of equipment. These programs often but do not always complement the services that are offered by the IOU, which are also available to CCA customers. Other CCAs work to connect their customers with energy efficiency opportunities provided by utilities, governments, or other entities. As utilities have greater resources and CCAs can face challenges in engaging in energy efficiency, we encourage CCAs to consider the extra value they can bring to energy efficiency in their own specific context. Most utilities have more resources than do CCAs, as well as a longer history of offering energy efficiency programming. If the offerings and effectiveness of programs already available to a CCA's customers are robust, the CCA may best serve its customers' interests by helping to direct them to existing programs, acting as a "connecting" CCA. If, on the other hand, a CCA identifies gaps in customers reached or insufficiencies in existing utility programs, developing its own programming in an "offering" or "complementing" framework may be most effective. A CCA's capacity, regulatory structures, community needs, and local energy efficiency context should guide a program's approach. These issues are spelled out in table ES-1.

Table ES-1. Recommended CCA energy efficiency engagement level for various local energy efficiency contexts

Local energy efficiency context	Recommended EE engagement level for CCA
Utility offers insufficient or ineffective energy efficiency programs, and CCA customers are significantly underserved. CCA has developed community connections and resources necessary to design and administer programs effectively.	<i>Offering:</i> CCA directly offers a suite of energy efficiency programs, serving as a primary energy efficiency resource for its customers. This approach may serve to demonstrate new program models. While “offering” programs may fill gaps in existing utility programs, this is not their primary intent.
Utility offers some robust programs, but CCA customers, or a segment of them, are underserved, or existing offerings do not reach marginalized communities.	<i>Complementing:</i> CCA provides targeted programs to complement existing utility offerings and improve efficacy or reach underserved populations. “Complementing” programs attempt to fill gaps in existing utility programs.
Utility offers effective and robust programs that target equity and reach all segments of the community.	<i>Connecting:</i> CCA guides customers to existing utility and government programs and serves as a conduit of information.

Steps staff members can take to identify the energy efficiency context in which their CCA operates are summarized in figure ES-2.

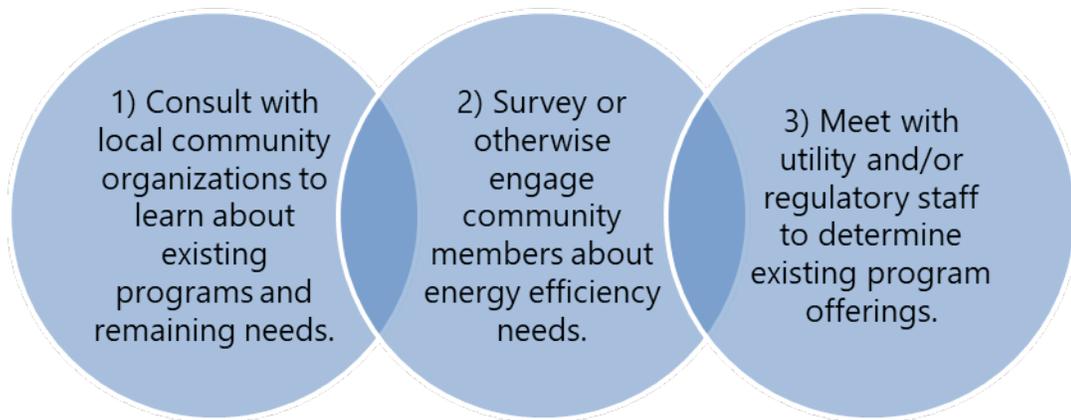


Figure ES-2. Steps to identify the energy efficiency context

In contexts where communities would be best served by a CCA directly offering energy efficiency programs, CCAs face several challenges. They may have significant funding

limitations that are greater than those faced by utilities, which have larger revenue streams thanks to their age, size, and business model. Utilities also have access to large amounts of dedicated funding and established regulatory structures. CCAs can be challenged by regulatory structures that influence their role in energy efficiency program administration, such as cost-effectiveness testing requirements.

Existing programs illustrate strategies that cities can use to overcome or reduce these challenges. Resourcing strategies such as partnerships, grant funding, and inclusion of energy efficiency in budgeting processes can help programs overcome funding limitations. Defining the role of energy efficiency in a CCA's efforts, based on their local energy efficiency context, can support cities in reaching their goals.

FINDINGS: AIMING FOR EQUITY IN ENERGY EFFICIENCY INITIATIVES

CCA programs often have a unique opportunity to advance equitable outcomes for their customers: By using their local focus, they can help distribute costs and benefits of energy equitably throughout their community. Several CCAs identify equity in their program goals, and more should follow suit. CCAs should pursue a comprehensive and strategic approach to achieve a fair distribution of energy efficiency costs and benefits, identifying and targeting customers who have been overlooked by existing programs. This requires sharing program participation information among program administrators. It is also important to clearly understand the demographics of a CCA's customer base and the degree to which it is representative of the community to determine whether the program is well positioned to enhance equity through its services. Inclusive community engagement is a key strategy for success. An engagement process that centers community voices can allow program developers to learn from community members rather than aiming primarily to educate them. It is important that CCAs intentionally pursue equity, as opposed to assuming equity. There is room for all CCAs to address how they can contribute to better societal outcomes and incorporate accountability for equity into their initiatives.

CONCLUSIONS AND NEXT STEPS

We find that the majority of CCAs nationwide are not pursuing energy efficiency and that CCAs face challenges in doing so. However, energy efficiency can play an important role in reaching cities' economic and sustainability goals. No matter its setting or structure, a CCA has the opportunity to promote energy efficiency, whether through its own programs or by connecting its customers to existing programs. The mechanism by which CCAs can best add value to existing energy efficiency resources in their community is determined by the local

energy efficiency context. By proactively considering barriers and strategies for success, cities can be more successful at achieving energy savings, improving equity, and realizing the overall benefits of energy efficiency.

Introduction and Project Context

Research conducted for ACEEE's *City Scorecard* indicates that cities are increasingly considering community choice aggregation (Ribeiro et al. 2020). CCAs are local government entities that competitively procure electric generation service on behalf of their residents, businesses, and municipal accounts as an alternative to the incumbent utility, while customers still receive transmission, distribution, billing, and perhaps other services from the incumbent utility (EPA 2021). Cities and counties often engage in aggregation in response to climate goals, but to date, research has not explored the extent of energy efficiency programming in CCAs or the opportunities for CCAs to engage with energy efficiency. This report provides the first view of the landscape of energy efficiency deployment in CCAs in the United States.

While we acknowledge that CCAs can be formed by individual cities, multiple cities, or counties, we use *city* in this report for simplicity. As staff, elected officials, and community leaders increasingly consider the adoption of community choice aggregation, there is an opportunity to maximize the role of energy efficiency in a CCA. Doing so can better position CCAs to reach their sustainability, equity, and economic goals. This report is a resource to guide CCAs in incorporating energy efficiency into their efforts.

In states where community choice aggregation is allowed, cities and counties can form CCAs individually or join with other cities to do so. While some CCAs are run by city staff, many others are operated by multiple jurisdictions or a joint powers authority (JPA), or by a third-party administrator engaged to implement and manage operations. CCAs can leverage the buying power of an entire community to negotiate better energy rates and terms with a wholesale supplier. They also have the option to procure cleaner energy sources and in some cases support the deployment of additional local renewable sources. CCAs in several states have been pursuing levels of renewable generation higher than what is mandated in their states; these are seen as a tool to drive climate action nationwide and as a response to customer demand for green energy (Trabish 2021). Energy efficiency can also play a key role in reducing greenhouse gas emissions in service of climate goals (Nadel and Ungar 2019). If structured such that communities of all wealth levels have access to the CCA model, CCAs that go beyond searching for lower-cost energy options can powerfully advance equity, clean energy, and local control (Baker 2021).

While we acknowledge the broad range of energy and climate actions undertaken by CCAs across the United States, including renewable energy, electrification, consumer protection, and climate resilience efforts, this report focuses specifically on CCAs' engagement in energy efficiency. We recognize that regulatory structures governing CCAs at the state level

significantly influence the energy efficiency opportunities available to them. However, because our primary audience for this report is CCAs considering engagement with energy efficiency and communities considering CCA formation, we do not focus on or propose regulatory changes. Rather, this report is written to provide examples and recommendations for CCAs with the assumption that they are operating within the existing regulatory environment. We identify comparisons between CCA and IOU energy efficiency program effectiveness and regulatory support of CCA involvement in the energy efficiency space as areas for future research.

Using data collected from stakeholder interviews, written data requests, and publicly available program information (for details, see Appendix B), this report seeks to answer the following questions:

- To what extent have cities incorporated energy efficiency into their community choice aggregation programs? How have they done so, and how did they work with their communities, utilities, and regulatory commissions to develop their approach?
- To what extent have CCAs been designed to achieve equitable outcomes? How can cities engaging in CCA in the future best build equitable energy efficiency programs?
- What challenges are faced by CCAs in their energy efficiency efforts? What strategies are used to address these challenges?
- How can cities best incorporate energy efficiency within the structure of a CCA?

CCA LANDSCAPE

States must pass legislation to enable communities to engage in aggregation. To date, community choice aggregation is authorized in nine states, with the most recent enabling legislation passed in 2018 in Virginia, and active programs exist in seven. Figure 1, below, shows the states that have authorized or are considering legislation to allow cities to pursue CCAs.

Authorized in 9 States:

- California
- Illinois
- Massachusetts
- New Hampshire*
- New Jersey
- New York
- Ohio
- Rhode Island
- Virginia*

Actively Investigating:

- Arizona
- Colorado
- Connecticut
- Maryland

Watch List/Potential:

- Oregon
- Washington

* Not yet implemented

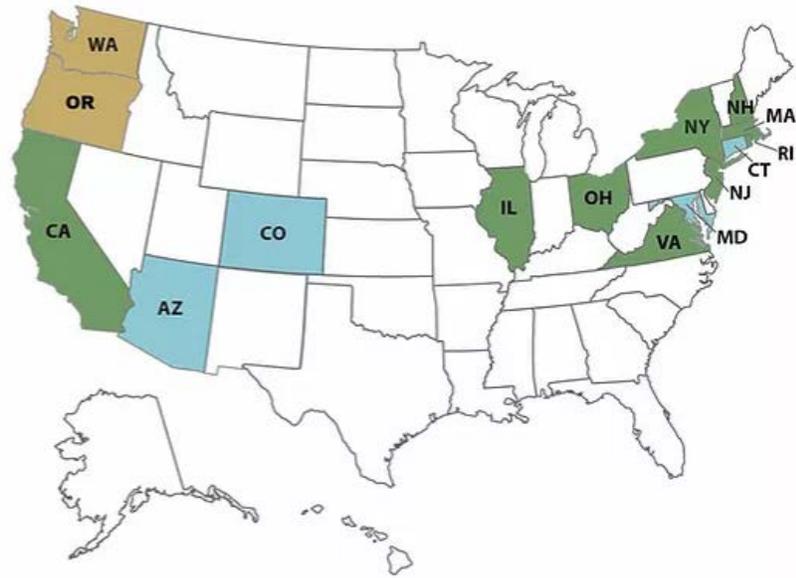


Figure 1. CCA authorization by state. Source: LEAN Energy US 2021

Several municipalities in each of the seven established states have an active CCA in place. Communities in other states are exploring the potential for community choice aggregation. For example, in 2021 the Maryland General Assembly passed legislation enabling Montgomery County to implement a pilot opt-out CCA (Montgomery County, MD 2021). We acknowledge that these states have significant differences in their CCA landscapes and different resulting challenges. In this paper, we provide general information that applies to CCA efforts across the United States.

Table 1, below, provides an overview of the CCA legislation and number of programs in the nine states permitting community choice aggregation as of the publication date of this report.

Table 1. CCA legislation by state.

State	Year established	State statute	Estimated number of municipalities currently participating in a CCA ⁴
California	2002	Assembly Bill 117	183 ¹
Illinois	2009	House Bill 362	550 ²
Massachusetts	1997	Acts 1997, Chapter 164	164 ³
New Jersey	2003	Assembly Bill 2165	12 ⁴

State	Year established	State statute	Estimated number of municipalities currently participating in a CCA ⁴
New York	2014	New York State Public Service Commission, Case 14-M-0224	64 ⁵
Ohio	1999	Senate Bill 3; Senate Bill 221	323 ⁶
Rhode Island	2002	House Bill 7786	0 ⁷
Virginia	2018	House Bill 1590	0
New Hampshire	2019	Senate Bill 286	6 ⁸

Source: NCSL 2015; ¹ CAL CCA 2021; ² Plug In Illinois 2021; ³ Massachusetts Government 2020; ⁴ This information was obtained via an internal conversation with Sustainable Jersey and is the number of aggregation programs in New Jersey going beyond the state renewable portfolio standard. Because we were unable to verify the total number of aggregations in the state without such standards, this may represent an undercount; ⁵ New York State 2021; ⁶ Ohio Public Utilities Commission 2021; ⁷ Although Rhode Island currently has no active CCA programs, several cities are in the process of implementing them. The Rhode Island Public Utilities Commission approved plans for Providence, Central Falls, Barrington, and South Kingstown in May 2021, and programs are expected to be operational in late 2021 or early 2022; ⁸ Community Power Coalition of New Hampshire 2021, *Fundamentals of Community Choice Aggregation*

FORMATION

City or county staff must follow a legislative process in order to form a CCA, with the requirements in each state defined by the state legislation enabling community choice aggregation. Generally, in states with enabling legislation, the municipal governing body votes to aggregate its electricity or a public referendum is passed.

GOALS

Both our literature review and our interviews with city leaders pursuing or engaged in community choice aggregation show that communities are motivated to pursue CCA for two primary reasons: to procure electricity that is less carbon intensive and to lower the cost of electricity for their residents.

Community choice aggregation can empower a municipality to procure wholesale electricity from sources that are more aligned with their decarbonization and/or sustainability goals. East Bay Community Energy (EBCE), a CCA formed by 11 communities in California including Oakland and Berkeley, recently committed to provide a 100% carbon-free product to its customers by 2030, or about 15 years before the state of California's target date for carbon-free electricity. Although EBCE customers fall within the service area of Pacific Gas & Electric

(PG&E), EBCE's Bright Choice plan, in which 60% of the delivered electricity comes from renewables, is priced 1% below PG&E's basic plan (EBCE 2021e.).

Beyond the two primary reasons communities choose to pursue aggregation, other motivating factors discussed in interviews include:

- The ability to offer targeted energy efficiency programs and other energy services such as transportation electrification, resilience programming, and solar
- Greater consumer protection and choice
- New and/or local renewable power development
- Economic and workforce development associated with local energy supply and services

ADMINISTRATION

CCA operations are generally managed through a JPA or a municipal or county government, or contracted to a third-party administrator. For example, San Jose Clean Energy, San Jose's CCA, is operated as a city department (SJCE 2021). In contrast, Hudson Valley Community Power in New York is a CCA serving nine communities and administered by Joule Community Power, a third-party administrator (Hudson Valley Community Power 2021). The third-party administrator model is most common for smaller CCAs and individual municipality CCAs, which are heavily represented across the country. Cities can also join together to form a CCA through a JPA, in which elected or appointed officials from each participating community serve as the CCA's board of directors and the program is administered by a separate staff. In all cases of aggregation, the IOU still maintains control of billing, revenue collection, grid distribution, and transmission operations. Customers of a CCA continue to have access to energy services that are offered by their IOU and may switch between the CCA and IOU generation service.

STRUCTURE: OPT-IN VERSUS OPT-OUT

Participation is always voluntary for those who live in the service area of a CCA. Most commonly, residents are automatically enrolled in the CCA unless they deliberately choose to not participate. The process of CCA formation includes a period of notification, during which residents receive information about the CCA and what action is required to decline participation. Residents who opt out of the CCA continue to be served by the traditional utility in their area by default.

Though far less common, some CCAs operate under an opt-in structure, which requires residents to proactively choose to participate. For example, Ohio allows municipalities to

pursue an opt-in structure, which then exempts them from the voter-approval requirements of municipalities developing opt-out CCAs (OCC 2021).

Some CCAs also have a tiered structure, with a standard default option that customers are enrolled in unless they choose to receive cleaner energy, sometimes locally sourced, at a price premium. This is commonly known as an “opt-up” structure. Marin Clean Energy (MCE) offers its customers three choices: MCE Light Green, MCE Deep Green, and MCE Local Sol. MCE Light Green, the standard option, is cost competitive with the rates charged by PG&E, the utility whose service area includes MCE customers; 60% of its energy comes from renewables, compared with PG&E’s 29%. MCE Deep Green and MCE Local Sol both come at a cost premium but provide customers with options that consist of 100% renewable energy, with Local Sol providing customers with locally produced solar (MCE 2021).

When considering community choice aggregation, policymakers in municipalities face several decisions based on their local context. Figure 2 provides an overview of key questions, which are discussed later in this report.



Figure 2. Key questions for cities considering community choice aggregation

Potential CCA Engagement in Energy Efficiency

Community choice aggregation has been described as a potential mechanism for community control over energy supply and increased deployment of clean energy (Xia 2017). Research has examined the potential for greenhouse gas emission reductions resulting from the CCA model as CCAs push the energy market toward more renewable

generation; it has also studied the challenges that CCAs are likely to face in achieving these outcomes (O'Shaughnessy et al. 2019; Kennedy 2017; Trabish 2021). Community choice aggregation has also often been highlighted as a potential opportunity for enhanced energy efficiency deployment in communities (Burke, Finn, and Murphy 2005; McGee and Swaroop 2020; Jung 2017; Clegg 2019). By locally controlling energy decisions, a city can develop and administer energy efficiency programs that cater to their particular community. Because they are locally focused by definition, CCAs can meet customer needs in a more targeted way, including by reaching underserved segments of their community and responding to natural disasters or local events (Trumbull, Gattaciecceca, and DeShazo 2020). Future research should take up these potential benefits as both aggregation and energy efficiency deployment in CCAs evolve.

The factors motivating a community to pursue energy aggregation influence their priorities and approaches to a variety of issues, including energy efficiency (Hess 2019; Gunther and Bernell 2019). The degree to which CCAs pursue their own programming or connect their customers to existing utility opportunities depends on the effectiveness and equity of existing programs offered by utilities and governments. Additionally, cities pursuing aggregation may have limited capacity that will inform their approach and level of engagement in energy efficiency. However, no matter the goals that lead a community to form a CCA and no matter the context, energy efficiency can help advance them.

Just like utilities, CCAs generally have the option to administer their own energy efficiency programs, and all CCAs can benefit their customers by engaging in energy efficiency in some way. Some CCAs directly offer programs that include installation of energy efficiency measures, rebates, and equipment. Some energy efficiency programs implemented by CCAs are intended to complement the services offered by the IOU, as regulators and CCAs try to avoid duplicating programs that customers can access through the local utility. Other CCAs are less concerned about overlap and focus on developing programs that they identify as most important for their customers. Still others work to connect their customers with existing energy efficiency opportunities provided by utilities, governments, or other entities. Because customers of CCAs still pay energy efficiency surcharges on their utility bills, they continue to have access to energy efficiency programming and other initiatives administered by their local IOU, no matter the engagement level of the local CCA.

Because they are controlled by local residents, CCAs may be well positioned to offer energy efficiency services that are targeted and equitable (Burke, Finn, and Murphy 2005; McGee and Swaroop 2020; Clegg 2019). For example, in an interview, one CCA staff member commented on the strengths that a CCA can bring to energy efficiency programming: "Some of the things that we always talk about that we think we can do better than [the local utility]

is the local tailoring of programs, [with] more stakeholder input and feedback. And we just move more quickly because we're a smaller, more nimble organization, so we can launch pilots and test things and change a lot quicker than an IOU can."

Because of the potential for greater transparency, choice, and flexibility in targeting and engagement, community choice aggregation offers opportunities for advancing more equitable access to clean, affordable energy (McGee and Swaroop 2020). Cities that have set equity-related goals for their CCAs must develop programs accordingly, and this includes addressing tensions that may exist in their program structure between advancing equity and achieving maximum emissions reductions (Monk 2020). CCAs can be also be challenged in their equity and climate efforts by regulatory structures in their state that influence what programs they can offer and what resources they can access.

As highlighted in the literature, CCAs have several attributes that can enhance their potential for energy efficiency success. These include:

- A strong connection with the community they serve, including connections to community organizations
- Greater trust from the community
- A mission-driven approach

Even if a CCA does not administer its own efficiency program directly, it still has opportunities to act as a catalyst to increase participation in efficiency programs currently offered in the market, by:

- Providing information to customers
- Connecting or referring customers to efficiency programs offered by other entities, such as an investor-owned utility, state government, or the federal government.

Further, as the CCA landscape develops across the United States and new states and communities enable aggregation, states and regulators can enable CCAs to be a test bed for piloting potentially more innovative and inclusive energy efficiency programs.

Findings

In the following sections, we examine the approaches taken by existing CCAs to provide a resource for cities as they consider the inclusion of energy efficiency in their CCAs.

We collected data for this report using stakeholder interviews and written data requests sent to a variety of CCAs (for details, see Appendix B). We also used publicly available program information, including from program websites and documents provided by state public utility

commissions. Because CCA adoption and contextual factors influencing energy efficiency efforts vary across states, we included all states with active aggregation programs in our data set.

CCA ENGAGEMENT IN ENERGY EFFICIENCY

The majority of CCAs do not offer energy efficiency programs, but through the literature and interview process, we identified a small number of CCAs that currently directly administer energy efficiency programs in addition to what is offered to the area by the local utility, regional energy network, or government entity. We also identified CCAs in Ohio, Illinois, California, Rhode Island, and New Jersey that expressed interest in offering energy efficiency services in the future.

Others engage in energy efficiency by connecting their customers to existing offerings. For example, Valley Clean Energy, which serves several cities in California, offers a hub for customers to access energy efficiency opportunities available to them through utilities, tax incentives, and other sources (Valley Clean Energy 2021).

Some cities offer energy efficiency programming outside of their CCA. For example, Cincinnati administers WarmUp Cincy, which offers energy assessments, upgrades, education, and bill assistance to low-income residents. While Cincinnati has a CCA, the CCA is not directly involved in WarmUp Cincy. This report focuses only on the operations of CCAs themselves.

A typology of CCAs' engagement with energy efficiency is summarized in table 2.

Table 2. CCA energy efficiency engagement levels

CCA energy efficiency engagement level	Associated actions
Offering	CCA directly offers a robust suite of energy efficiency programs, serving as the primary energy efficiency resource for its customers.
Complementing	CCA offers targeted programs to complement existing utility offerings and/or advance inclusion of underserved populations.
Connecting	CCA advertises existing utility and government programs to its customers and serves as a conduit of information.
Disengaging	CCA does not participate in any energy efficiency efforts.

CCAs that engage in “offering” and “complementing” energy efficiency efforts vary greatly from state to state in the way they are funded, structured, and implemented, with much of this variability stemming from the regulatory environment. With the exception of Cape Light Compact, serving customers on Cape Cod in Massachusetts, all of the CCAs known to directly administer efficiency programs operate in California. Below, we describe energy efficiency funding mechanisms used by CCAs and summarize the current offerings of existing CCAs directly administering energy efficiency initiatives.

FUNDING OF CCA ENERGY EFFICIENCY PROGRAMS

There are three main funding sources for CCA-administered efficiency programs:

- State public goods charges collected on utility bills and allocated by the state’s regulatory commission
- CCA revenues collected from customers
- Additional program fees collected from customers

STATE PUBLIC GOODS CHARGES

Efficiency programs traditionally offered by IOUs, and by a small number of CCAs, are funded through a fee tied to a public purpose program and incorporated into the delivery charge found on bills paid by all IOU and CCA customers. This fixed public goods charge, sometimes referred to as an energy efficiency fee, varies from state to state, its size dependent on the comprehensiveness and effectiveness of the energy efficiency programs offered.

In California, CCAs (such as MCE) that administer an energy efficiency program funded through ratepayer fees have to follow the same process as an IOU to apply for these funds through the California Public Utilities Commission (CPUC); these programs are also subject to the same requirements as an IOU. For example, these programs must pass a cost-effectiveness test, as defined by the CPUC.¹ We discuss challenges faced by CCAs using this funding source in a later section of this report.

¹ Cost-effectiveness analysis assesses the costs and benefits of demand-side resource programs from the perspectives of different stakeholders, including participants and nonparticipants (CPUC 2021). For more

CCA REVENUES COLLECTED FROM CUSTOMERS

CCAs can also choose to fund energy efficiency efforts using their own revenues. Among these is Redwood Coast Energy Authority (RCEA) in California, which administers internally funded efficiency programs in addition to efficiency initiatives funded through the CPUC. There is a community advisory board that makes suggestions for programs funded through RCEA's energy procurement and sales. RCEA has internal goals and key performance indicators for programs funded through internal revenue, and the programs are ultimately at the discretion of its board of directors.

CCAs that elect to use revenue from electricity sales to fund efficiency services for their customers are not under the same obligations, such as passing a cost-effectiveness test, as the programs supported through ratepayer funds. Because cost-effectiveness tests focus on near-term customer needs by measuring immediate energy savings, they may undervalue benefits to market transformation, customer well-being, equity, and longer-term environmental goals (Chhabra 2020). Therefore, CCAs not under these restrictions are able to use a broader definition of benefits in their program decisions.

ADMINISTRATIVE FEES

Some CCAs can charge their customers a small administrative fee on their utility bill as part of the aggregation program. For example, the municipality can work with its energy supplier to place a small per-kWh fee on customers' bills. The municipal government can then dedicate these funds to expand efficiency offerings, or other public benefits programs, to its customers. Our research found that CCAs in both Illinois and New Jersey have been collecting administrative fees or intend to do so and are currently determining the best use of these funds.

GRANT FUNDING

CCAs can also pursue outside funding to help support their energy efficiency initiatives. For example, RCEA has assisted local schools, public safety agencies, and government partners in securing more than \$3 million in grants, as well as no- or low-interest loans, to pursue energy efficiency and renewable energy projects (RCEA 2021a).

information about cost-effectiveness tests to evaluate energy efficiency programs, and the limitations of these tests, see ACEEE's topic brief [Cost-Effectiveness Tests: Overview of State Approaches to Account for Health and Environmental Benefits of Energy Efficiency](#).

Example CCA Energy Efficiency Program Offerings

In the following sections we highlight current energy efficiency programs that are directly offered by CCAs. Although CCAs engage in a range of actions around clean energy and climate, such as initiatives related to resilience, renewable energy, demand response, and battery storage, here we identify only programs focused on building energy efficiency. We also do not highlight some beneficial electrification measures undertaken by CCAs, such as incentives for electric vehicles and electric vehicle charging infrastructure. We recommend that future research examine these broader energy actions taken by CCAs. Finally, multiple CCAs indicate that they have energy efficiency programs in development and not yet operational. Those programs are not taken up here.

Please see Appendix A for data on the effectiveness of the energy efficiency programs offered by Cape Light Compact and Marin Clean Energy.

CAPE LIGHT COMPACT, CAPE COD AND MARTHA'S VINEYARD, MASSACHUSETTS

Cape Light Compact's energy efficiency program offers a robust suite of programming that includes technical assistance, incentives, and rebates for residential and commercial customers.

As a result of Cape Light Compact's (CLC) energy efficiency offerings since its launch in 2001, its residential, commercial, and industrial customers have realized more than \$100 million in total lifetime savings (CLC 2020b). CLC's energy efficiency programs are funded through a ratepayer charge on each customer's electric bill; it is the same charge as that collected by IOUs to run energy efficiency programs throughout Massachusetts. The charge is collected by Eversource, the utility that serves the area, and then returned to CLC.

Prior to the formation of CLC, energy efficiency charges paid by consumers on Cape Cod and Martha's Vineyard could be used elsewhere in the IOU's Massachusetts service territory, but today, all energy efficiency funds paid by Cape Cod and Martha's Vineyard customers are used to fund energy efficiency upgrades for local residents and businesses. CLC customers also have access to the full range of offerings from Mass Save®, an initiative sponsored by Massachusetts's gas and electric utilities and CLC to provide a wide a range of services, incentives, training, and information promoting energy efficiency that help residents and businesses manage energy use and related costs (CLC 2021b). See table 3 for the types of efficiency programs offered by CLC.

Table 3. CLC energy efficiency offerings

Program	Customer type	Funding source
Residential New Construction The Residential New Construction program offers financial incentives to make newly constructed homes (and renovations or additions) more energy efficient than typical code-built homes. ¹	Residential— new buildings	Public goods charge
Home Energy Assessment CLC’s Home Energy Assessment utilizes a “whole home” approach to help identify energy-efficient upgrades that will reduce energy bills, increase year-round comfort, and create a healthier environment for homeowners and renters alike. ²	Residential	Public goods charge
Mass Save® HEAT Loan Zero-interest loans are available for approved energy-efficient home improvements. ³	Residential	Public goods charge
Rebates CLC offers rebates for many energy-saving upgrades (e.g., insulation, smart thermostats, lighting), sometimes covering the full cost. ⁴	Residential and commercial	Public goods charge
Business Energy Assessment CLC-approved vendors perform comprehensive energy assessments on existing buildings. ⁵	Commercial	Public goods charge

Sources: ¹ CLC 2021f; ² CLC 2021c ; ³ CLC 2021d; ⁴ CLC 2021e; ⁵ CLC 2021a

MARIN CLEAN ENERGY, SAN FRANCISCO BAY AREA, CALIFORNIA

Customers of Marin Clean Energy have access to a variety of energy efficiency services supported by partnerships, internal revenue, and ratepayer funds.

Marin Clean Energy (MCE) administers nine energy efficiency programs that benefit its 540,000 residential and commercial accounts, including six programs funded through a public goods charge administered by the CPUC and the others funded by MCE and sometimes other local agencies. CCAs in California that offer programs using CPUC-administered funds may choose either of two pathways: “elect to administer” and “apply to

administer.” By offering energy efficiency initiatives under the apply-to-administer approach, MCE is not limited to its own customers or limited in funding; in exchange, it accepts greater regulatory oversight of its portfolio. CCAs in California with elect-to-administer programs face less regulatory jurisdiction over their programming but may offer programs only to their own customers.

MCE’s programs are in addition to those provided by the local utility. Over the lifetime of the energy efficiency programs, MCE has saved its customers more than \$11.7 million (MCE 2020). Its Multifamily Energy Savings Program provides technical assistance, rebates, free direct install service for light-touch efficiency measures, and access to other resource-conservation programs. This multifamily offering operates alongside MCE’s Low-Income Families and Tenants (LIFT) Pilot Program with the goal to layer incentives and maximize benefits to better serve income-qualified multifamily properties that are not currently benefiting from other low-income energy efficiency programs. The LIFT Pilot Program provides comprehensive services and supports fuel switching from gas to electric heat pumps for cleaner and safer energy use (MCE 2019). Table 4 outlines the types of efficiency programs offered by MCE.

Table 4. MCE energy efficiency offerings

Program	Customer type	Funding source
Multifamily Energy Savings Program This program provides multifamily property owners with rebates up to \$1,000 per unit as well as free, comprehensive assessments and consultations for energy- and water-saving measures.	Multifamily	Public goods charge
Low-Income Families and Tenants Program An extra \$1,200 per unit is available for income-qualified multifamily property owners or renters for energy- and water-saving measures.	Multifamily	Public goods charge
MCE Healthy Homes Program Incentives of up to \$5,000 per home are provided for upgrades to improve the	Multifamily and single family	Internal revenues and grant support

Program	Customer type	Funding source
<p>health, safety, and efficiency of Marin County homes. Multifamily properties are also covered.</p>		
<p>Heat Pump Water Heater Contractor Incentive Program The program provides \$1,000 in cash rebates for participating contractors to install energy-efficient heat pump water heaters for MCE customers. For single-family homes, the incentive can be combined with the Bay Area Regional Energy Network’s Home+ rebates.</p>	<p>Multifamily and single family</p>	<p>Internal revenues</p>
<p>Home Energy Savings Program Qualifying homeowners and renters receive a free smart thermostat, installed at no cost.</p>	<p>Single family</p>	<p>Public goods charge</p>
<p>Advanced Energy Rebuild Napa Program Up to \$17,500 in incentives per home is available, as well as technical assistance to understand the program’s benefits, standards, and requirements. Measures include: high-performance walls or attics, advanced windows, insulation inspection, high-efficiency water heaters, heat pumps, ducts in conditioned space, ENERGY STAR® appliances, smart thermostats, electric vehicle charging stations, induction cooking, heat pump hot-water heaters, electric heat pump HVAC systems, and solar panel systems with battery storage. The program serves single-family homeowners in Napa County who lost their homes in the 2017 and 2018 wildfires.</p>	<p>Single family</p>	<p>Internal revenues and partnerships</p>

Program	Customer type	Funding source
<p>Single-Family Comprehensive Program</p> <p>This program provides digital or paper home energy reports directly to customers, with personalized recommendations for electricity savings, comparisons of energy usage with similar homes, and seasonal savings tips.</p>	Single family	Public goods charge
<p>Commercial Energy Savings Program</p> <p>No-cost energy assessments, start-to-finish project management, and rebates covering 20–100% of project costs are available.</p>	Commercial	Public goods charge
<p>Agricultural and Industrial Resources Program</p> <p>The program offers a tailored blend of technical assistance, procurement, support, incentive funding, and ongoing feedback on performance.</p>	Agricultural and industrial	Public goods charge

Source: MCE 2020

REDWOOD COAST ENERGY AUTHORITY, NORTHERN CALIFORNIA

Through partnerships and internal revenues, Redwood Coast Energy Authority offers no-cost energy efficiency consultations to residents and businesses, as well as free energy efficiency kits.

Established in 2003, Redwood Coast Energy Authority (RCEA) is a local government JPA whose members include one county and seven cities in northern California. RCEA’s mission, “is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient, and renewable resources available in the region” (RCEA 2021a, 2). RCEA began its CCA in 2017. It recently established program administrator status with the CPUC through California’s elect-to-administer pathway and secured \$1.8 million in public goods charge funding to support energy efficiency incentives and product rebates. As with MCE, these programs are in addition to

those provided by the local utility. Programs available to public, commercial, and residential customers will be announced in 2021.

Over the past five years, RCEA has assisted 22 school districts with Proposition 39–funded projects, addressing lighting, controls, refrigeration, HVAC, fuel substitution, hot water, building envelope, plug loans, and solar PV.² RCEA has also been able to develop and implement local CCA-funded programs, including providing more than 250 residential energy consultations and 90 residential energy efficiency kits in 2020 at no charge to the customer. See table 5 for the types of efficiency programs offered by RCEA.

Table 5. RCEA energy efficiency offerings

Program	Customer type	Funding source
Nonresidential Program RCEA provides no-cost, no-obligation assessment of lighting, refrigeration, and other systems to local businesses and organizations.	Commercial	Internal revenues
Energy Adviser Consultation RCEA has energy advisers available to speak to its customers.	Residential	Internal revenues
Energy Efficiency Kit RCEA offers free efficiency kits, valued at up to \$75, customized for its customers' homes. Kits may include LED light bulbs, smart power strips, low-flow showerheads, weather stripping, and more.	Residential	Internal revenues

Source: RCEA 2021b

² The California Clean Energy Jobs Act, or Proposition 39, allocates revenue to local education agencies to support energy efficiency and alternative energy projects, along with related improvements and repairs that contribute to reduced operating costs and improved health and safety in public schools (California Department of Education 2020)

EAST BAY COMMUNITY ENERGY, ALAMEDA COUNTY, CALIFORNIA

Using internal revenues and partnerships, East Bay Community Energy offers induction cooktop trials and incentives, heat pump water heater installation incentives, technical assistance for building and fleet electrification, and energy efficiency data sharing.

At the time of publication, East Bay Community Energy (EBCE) was in the process of requesting to administer ratepayer-funded energy efficiency programs. On its website, EBCE promotes efficiency offerings available to its customers from the incumbent utility, PG&E, and from the Bay Area Regional Energy Network (BayREN), which also serves its customers. In 2019, supported by internal funds and partnerships with private organizations (Recurve, OhmConnect, and Rising Sun), EBCE began developing a pay-for-performance (P4P) pilot program aimed at single-family, low-income residential, and commercial customers. Through this P4P program, EBCE is paying energy efficiency contractors on the basis of their ability to reduce demand during peak evening hours and deliver verified energy savings to customers who use a lot of energy during peak hours (EBCE 2021c). EBCE also offered a short-term pilot in conjunction with Rising Sun and OhmConnect to deliver energy education and demand-enabled devices (such as thermostats or smart plugs) to customers participating in rate discount programs. Table 6 outlines the types of efficiency programs offered by EBCE.

Table 6. EBCE energy efficiency offerings

Program	Customer type	Funding source
Heat Pump Water Heater Installation Incentives Through a partnership with BayREN and Stopwaste, EBCE offers funding to reduce installation costs of high-efficiency heat pump water heaters in their service area. ¹	Residential	Partnerships and internal revenues
Induction Cooking Rebate EBCE offers rebates to cover equipment, installation, and electrical upgrade costs for new induction cooking appliances for commercial kitchens. ²	Commercial	Internal revenues

Program	Customer type	Funding source
<p>Energy Efficiency Data Sharing</p> <p>Administrators and implementors of energy efficiency, demand response, and energy management programs can contract EBCE to access their powerful database for information to increase building upgrades across Alameda County.³</p>	<p>Commercial and municipal</p>	<p>Internal revenues</p>

Sources: ¹ EBCE 2021d; ² EBCE 2021b; ³ EBCE 2021a

SONOMA CLEAN POWER, SONOMA AND MENDOCINO COUNTIES, CALIFORNIA

Sonoma Clean Power offers energy efficiency programs targeting businesses, residential customers, and developers. They include incentives, educational resources, and financing mechanisms and an Advanced Energy Center that demonstrates energy efficiency technologies.

Sonoma Clean Power (SCP) offers a variety of energy efficiency programs funded by internal revenues, grant funding, and partnerships with governments and private entities. Funded by the California Energy Commission’s EPIC research program, SCP has an Advanced Energy Center in Santa Rosa that serves as an educational and community hub and demonstrates energy efficiency technologies. An Advanced Energy Build program offers energy efficiency incentives and technical assistance for builders, with increased incentives for affordable housing. SCP’s residential customers are eligible for interest-free on-bill financing of energy efficiency technologies up to \$10,000. In partnership with Sonoma County, SCP also offers technical assistance audits to business customers; these include evaluations of existing systems and recommendations for equipment upgrades and retrofits. Sonoma Clean Power Electrify is an online tool that creates a customized dashboard for residential customers, giving recommendations for electrification. At Sonoma County and Mendocino County library branches, customers can check out DIY Home Energy Toolkits, which include informational resources and equipment such as light bulbs, weather stripping, low-flow showerheads, and water- and energy-measuring devices. Finally, SCP runs a grant competition open to students of Santa Rosa Junior College who propose new energy ventures, including those involving energy efficiency. See table 7 for the types of efficiency programs offered by SCP.

Table 7. SCP energy efficiency offerings

Program	Customer type	Funding source
<p>Advanced Energy Build</p> <p>This program offers new construction projects technical guidance and incentives up to \$4,500 for energy-efficient and resilient projects.</p>	Residential	Internal revenues
<p>Advanced Energy Rebuild</p> <p>Up to \$17,500 is available for residents who were affected by the October 2017 fires to rebuild energy-efficient homes.</p>	Residential	Internal revenues and partnerships
<p>DIY Home Energy Toolkit</p> <p>Customers can check out kits to measure how much energy and water they consume and make a few quick home upgrades to save money.</p>	Residential	Internal revenues
<p>On-Bill Financing</p> <p>SCP offers 0% financing for select energy efficiency technologies.</p>	Residential	Internal revenues
<p>Technical Assistance Advisory Program</p> <p>This program offers no-cost energy efficiency advisory services to help eligible small and medium-size businesses.</p>	Commercial	Internal revenues

Source: Sonoma Clean Power 2021

LANCASTER CHOICE ENERGY, LANCASTER, CALIFORNIA

In 2018, Lancaster Choice Energy (LCE) became the first CCA in Southern California to apply for and receive approval to offer ratepayer-funded energy efficiency programs to its customers through the elect-to-administer pathway. It ended its programs in 2021 (LCE 2018). LCE's Energy Advisor program offered homeowners free and low-cost strategies to reduce energy usage and save money on their monthly utility bill. Measures included weatherization, efficiency upgrades, and special financing programs for energy-saving appliances and equipment. LCE's Small Commercial Direct Install program assisted business owners in Lancaster seeking to become more energy efficient. Once approved, Lancaster business owners qualified for the free installation of energy-saving products, such as LED light bulbs. At the time of this research, LCE advertises regional programs for which their customers are eligible.

Barriers to Incorporating Energy Efficiency into CCAs, and Strategies for Success

CCAs can face barriers to incorporating energy efficiency. Municipal staff considering community choice aggregation for the first time or contemplating their approach to energy efficiency, particularly those weighing an “offering” or “complementing” approach, can proactively evaluate these barriers and develop strategies to avoid them, as summarized in figure 3.

Following a discussion of the barriers that cities face, we outline strategies for success in overcoming these challenges.

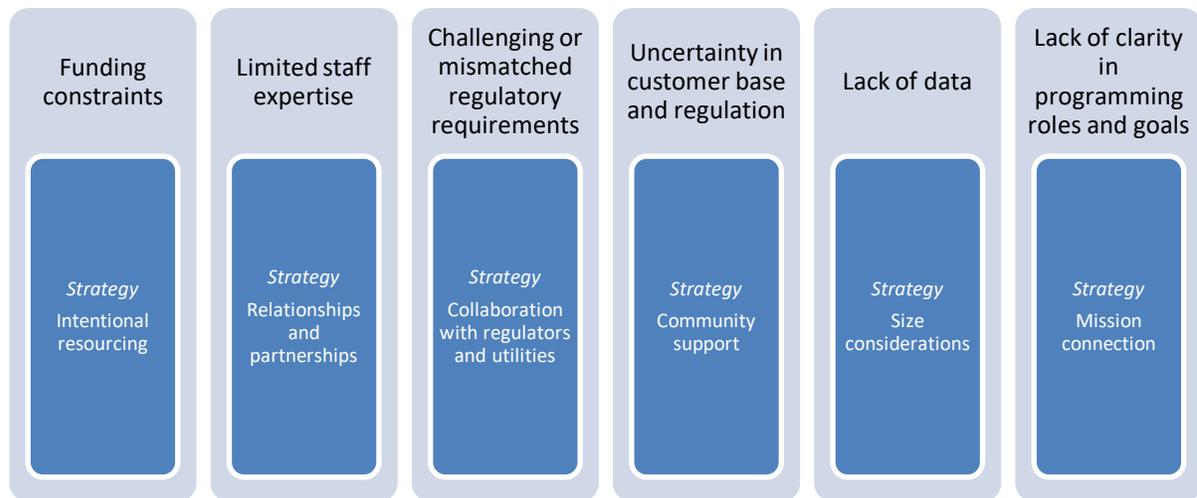


Figure 3. Barriers and strategies for success in incorporating energy efficiency

OBSTACLE: FUNDING CONSTRAINTS

CCAs, which are smaller by definition than most IOUs, can find it challenging to fund a program because of their scale. Consultants and attorneys commonly required to navigate the regulatory process can pose significant costs that can be difficult for CCAs to meet. Cities and towns often have much smaller financial reserves than those available to utilities. Smaller budgets and smaller reserves limit programming opportunities as well as the ability to take financial risks or provide upfront financing for new programs, particularly for new CCAs. For cities that include customer savings as a primary goal for pursuing a CCA and endeavor to maintain rates that are lower than or comparable to those offered by the IOU, it may be hard to find the initial funding to provide energy efficiency services to their customers. Further, if accessing funding through ratepayer charges at the regulatory level, CCAs may face a funding cap.

STRATEGY FOR SUCCESS: INTENTIONAL RESOURCING

Implementing energy efficiency initiatives requires financial and staff resources. From program design to administration to applying for regulatory approval, CCAs can be disadvantaged compared with IOUs, with smaller numbers of staff and fewer financial resources to support their work. Larger IOUs often have more experience in the regulatory context and more staff resources at their disposal. Unsurprisingly, communities can be more successful in implementing energy efficiency by proactively resourcing CCA programs as early as possible. To accomplish this, cities can pursue external grant funding, plan for energy efficiency in their initial budgeting, and leverage partnerships. Policymakers who oversee regulatory structures can also influence the degree to which CCAs have opportunities to access resources that are accessed by IOUs.

OBSTACLE: LIMITED STAFF EXPERTISE

For cities operating CCAs using municipal personnel, a lack of staff capacity and experience can present a barrier to engaging in energy efficiency. City staff may not be experienced in energy efficiency and may lack the training or specific energy or utility background required to navigate existing regulatory processes. Moreover, they may already be balancing multiple roles and projects. Whether using city employees or contracting with third-party administrators, CCAs may be challenged to sufficiently staff their programs to include people with expertise in program design, administration, and marketing and to clearly delegate energy efficiency roles. In addition, regulatory requirements can cause CCAs to perceive an imbalance between the required staff time and expertise and the potential benefits, particularly when a lengthy and complex application process is required for a relatively small pool of funding.

STRATEGY FOR SUCCESS: RELATIONSHIPS AND PARTNERSHIPS

We find that connecting with other aggregating communities can allow cities to learn from the experiences of others and supplement the knowledge of staff members when programs are administered by city personnel. Trade associations or other municipal connections can facilitate these relationships. As navigating complex regulatory requirements and processes can be particularly challenging for CCAs, external consultant relationships can also help guide communities through regulatory processes.

CCAs report that their partnerships and relationships were critical to successfully deploying energy efficiency. Partnerships and connections with community organizations helped them both to develop effective programs based on community needs and to gain program support by leveraging those connections. CCAs typically have closer connections to the community relative to IOUs. These connections can help increase the deployment of energy

efficiency; leveraging these relationships is an important strategy for success. Similarly, existing partnerships with government offices can lead to a more efficient and effective internal collaboration. This also allows energy efficiency programs offered by CCAs to be integrated into other city programs or zoning requirements.

OBSTACLE: CHALLENGING OR MISMATCHED REGULATORY REQUIREMENTS

Regulatory requirements can pose challenges to community choice aggregators by limiting the types of programs that a community can feasibly operate. To access ratepayer funds in California, CCAs applying to use public purpose program funding are required to meet cost-effectiveness criteria that may not align with a community's own goals for energy efficiency programming. For example, some CCAs in California interested in centering equity in their programming acknowledged that the offerings they viewed as most important for serving marginalized and underserved customers may be less cost effective than those defined as cost effective at the PUC level. Cost-effectiveness tests can also be challenging for smaller CCAs desiring to invest in emerging ideas or technologies that may not be cost effective in a short, limited time scale. Multiple CCAs interviewed for this report said that they adjust their proposed offerings to include items that will meet the predefined criteria.

STRATEGY FOR SUCCESS: COLLABORATION WITH REGULATORS AND UTILITIES

As mentioned earlier, customers of CCAs remain eligible for the energy efficiency programs offered by the IOU in their service area. These programs are typically well established by virtue of their longevity and may include a wide array of options. When CCAs directly offer energy efficiency services, they typically aim to identify a unique niche and provide programs not already available to their customers through other entities, in order to administer effective programs and demonstrate program need. Redwood Coast Energy Authority, for example, tailors its programs to specifically fit its local community, with agricultural programs for specific sectors and customized rebate offerings. A preexisting and collaborative relationship with the utility can help a city succeed in developing a CCA energy efficiency program by allowing opportunity for conversations. By sharing and discussing plans with the utilities and regulators in a collaborative fashion, CCAs can more easily identify opportunities for program offerings not currently available to their customers. For example, a CCA staff member shared:

“[We] cultivate our relationship with the regulators, and we’ve had quite a few meetings with the regulatory team that is responsible for energy efficiency and that would be reviewing any application that we submit. I think understanding and getting their viewpoints on state priorities and what’s going on in the market for the

various programs that [the local IOU] and others are submitting to them for consideration—I think that’s really important. We’ve also had some good meetings with [the local IOU] just talking through their offerings and how our offerings would fit in with theirs. So in that sense, it’s been a pretty productive relationship with the IOU as well. There’s an information gathering.”

Creating collaborative relationships with regulators is seen as an important strategy for success.

OBSTACLE: UNCERTAINTY IN CUSTOMER BASE AND REGULATION

As discussed above, CCAs can face uncertainty in funding streams, including the expected amount of funding they will be able to access from their customers. This stems in part from uncertainty about the size of their customer base when customers are able to opt out of programs at any time. And regulatory proceedings can add to this dynamic. For example, a staff member of a CCA developing an energy efficiency offering commented on the implications of an expected decision from the regulators:

“We’re in the review and development phase of a potential funding application to the [PUC] that may or may not go through. If it does not, I don’t think that means we will not be involved in an energy efficiency program, but it definitely does mean that we’ll have to continue to do so in a relatively constrained budget. And so we’re kind of wait-and-see at this point.”

In the face of such uncertainty, CCAs may be inclined to focus on basic energy procurement. If energy efficiency is seen as a discretionary additional program as opposed to fundamental, it may not take priority for CCAs navigating an uncertain context.

STRATEGY FOR SUCCESS: COMMUNITY SUPPORT

Garnering community support for the CCA overall, and for energy efficiency in particular, can help a CCA implement energy efficiency initiatives successfully. Community support can allow feedback to develop effective programs, grow political support from elected officials, and garner public backing for regulatory or legislative initiatives. Additionally, a supportive community is likely to have better awareness of program offerings, making increased and stable participation more likely. Community engagement can also allow the CCA to clearly identify the value proposition of energy efficiency for its members and to develop well-targeted programs.

OBSTACLE: LACK OF DATA

Accessing and analyzing customer data can be more challenging for CCAs than for more established IOUs with greater organizational capacity. One city staffer described some of the frustrations associated with data availability:

“We don’t know how much money is being extracted from [city] ratepayers to pay for energy efficiency programs at the state level versus how much money is making its way back into [our city] through those programs. So that’s one really basic piece of information that makes it difficult for us to understand who is participating or what level of participation we have in energy efficiency programming. There’s a bunch of other data we’d love to have from the utilities that’s not standardized in their public reporting so it’s difficult for us to get it.”

Access to data, such as customer energy use information, and data analysis support can help CCAs to develop effective programs and to have greater success when applying for ratepayer funds.

STRATEGY FOR SUCCESS: SIZE CONSIDERATIONS

Large and small CCAs have differing challenges, including but not limited to data access. CCAs serving larger cities or multiple communities can be more successful than small ones because they have greater buying power and operate at a larger scale, which makes efficiency implementation more manageable. Therefore, a community may have more success incorporating energy efficiency by partnering with others in its CCA structure. At the same time, CCAs say that having a clear and cohesive service territory also helps them to be successful. A CCA serving a city or defined geographic area and working independently may be able to more easily identify needed services and more effectively communicate with its customers. Partnering cities may face challenges in joint decision making, particularly if they have different goals for aggregation. Size considerations can influence a CCA’s ability to acquire and analyze customer data through shared resources, staff expertise, and capacity to communicate with utilities and regulators. Communities should consider their particular context and the way that their structure could support the incorporation of efficiency.

OBSTACLE: LACK OF CLARITY IN PROGRAMMING ROLES AND GOALS

CCAs may not perceive a clear role for their own energy efficiency initiatives in the face of preexisting IOU or other offerings. With limited resources and time, cities are likely to focus on the clearest ways to add value, and when energy efficiency programs already exist for their customers, CCAs may prioritize other areas. Identifying the efficacy of existing

programs and the CCA's ability to add value for its customers is important if a case is to be made for a given energy efficiency approach. It can also facilitate successful applications for ratepayer funds by demonstrating the need for proposed programming.

STRATEGY FOR SUCCESS: MISSION CONNECTION

Creating value for customers and helping to address climate change are the basic goals of most CCAs, and energy efficiency contributes to these goals. When energy efficiency is directly linked to the mission of the aggregation, and when the benefits of efficiency are recognized and approached comprehensively and strategically, CCAs can, with greater clarity, align them with the needs of their customers.

Community Choice Aggregation as an Opportunity for Equitable Energy Efficiency Deployment

Community choice aggregation offers an opportunity to advance equity through the democratic control of energy at the local level. Aggregation can level the uneven playing field faced by marginalized communities by reducing the hurdles individuals may face in navigating the energy system, delivering cost savings, and giving community members an increased say in how their energy is generated and procured. However, while some cities explicitly cite equity goals as a driver of CCA development and identify equitable programming as a key tenet of their mission, other CCAs have not explicitly approached their work through an equity lens.

A COMPREHENSIVE AND STRATEGIC APPROACH TO EQUITY

CCAs are uniquely positioned to identify the context and needs of their particular community and to reach their customers. This gives them the opportunity to strategically and actively pursue inclusion and just distribution of energy costs and benefits. CCAs report a variety of ways that they have developed initiatives based on their specific community context. For example, some have supported community nonprofit food organizations by offering programs to finance equipment and upgrades, thereby increasing their capacity to feed food-insecure community members—a heightened need during the COVID-19 pandemic. This CCA also described proposed offerings related to refrigeration that will address food deserts by allowing corner stores to sell more fresh produce. Another CCA used a grant agreement with its energy supplier to provide emergency energy bill assistance for undocumented residents who had been ineligible for existing programs. CCAs can also consider financing strategies to support customers for whom purchasing an efficient appliance would otherwise be prohibitively expensive, even with a rebate program.

When developing program offerings, CCAs have an opportunity to identify and target customers who have been overlooked by IOU program offerings. They can consider the particular segments of their communities that are in need of services, such as customers in very rural areas, and work to dismantle the barriers to reaching them (Samarripas, forthcoming). Energy efficiency workforce development efforts also present opportunities to advance equity: CCAs can offer or support targeted training for marginalized community members to allow them access to energy efficiency jobs (Muro et al. 2019). At a basic level, offering program information and materials in multiple languages consistent with the languages spoken locally can ensure that community members can access information and programs. Community engagement processes can also lead to more effective programs and success in achieving a fair and accessible range of offerings. Instead of aiming primarily to educate, CCA staff should be prepared to listen and learn from community members, centering their concerns and lived experiences.³

THE TRAP OF ASSUMING EQUITY

While many communities view equity as central to their CCA mission, others have not sufficiently incorporated equity into their program design. These CCAs have an opportunity to develop more community-oriented programming by explicitly focusing on mitigating energy injustice faced by low-income communities and communities of color and reaching all segments of their population. In our research, some CCA staff said that because their programs were open to all customers, or because they had high participation rates, they felt they had reached a representative segment of their community. But this may not be true; many marginalized groups have been historically underserved by program offerings while also being the most burdened by energy, climate, and environmental problems (Drehobl, Ross, and Ayala 2020; Hoerner and Robinson 2008; IPCC 2007; Dodman and Satterthwaite 2009; Jesdale, Morello-Frosch, and Cushing 2013).

There is room for all CCAs to thoughtfully address how they can contribute to fair and just distribution of burdens (pollution, economic costs) and benefits (cleaner air, local workforce development) related to energy in their own community context. Even those communities engaging in equity-focused programming must be sure to incorporate accountability into

³ Greenlink's [Process Guide](#) and [Equity Map](#) can be helpful tools to leverage data and inform equity outreach and targets.

their evaluations and decision making, using clearly defined metrics and goals, and to avoid assuming equitable outcomes on the basis of intent or technical availability to all customers.

A consultant who advises CCAs described the need for intentional staffing to support desired equity outcomes:

“I definitely think that for them to really actualize their goals and meet the true equity targets they set for themselves, there’s going to be more need for resourcing to make sure we’re hiring or they’re hiring the correct people who can carry out some of this work because . . . a lot of people at the CCAs are wearing multiple hats.”

ACEEE’s *City Clean Energy Scorecard* provides examples of best practices in incorporating equity into local energy efficiency work that CCAs can also consider. These include institutionalizing inclusive procurement policies, developing equitable decision-making systems, instituting community engagement procedures designed to include marginalized communities, and requiring accountability to equity goals and metrics (Ribeiro et al. 2020).

REGULATORY SUPPORT FOR EQUITY INITIATIVES

CCAs say that their ability to center equity in their work can be limited by the regulatory structure in which they operate. For example, as discussed above, regulators often evaluate proposed programs through a lens of cost effectiveness and energy savings. These evaluations can too narrowly define the benefits of programming. CCAs report sometimes needing to alter their proposed programs from what they originally viewed as the most equitable offering and a focus on greatest need in order to meet the regulatory standard. In evaluating programs, states should include equity considerations in the form of explicit measurement of outcomes and demographic information. This would facilitate CCAs’ deployment of equity-focused energy efficiency initiatives supported by ratepayer funds.⁴

MCE in California incorporates equity into its program offerings strategically and intentionally. Through a partnership with a county health department, it has directed efficiency programs toward those with health conditions such as asthma. One program has focused on ensuring safe and healthy housing for seniors; another is intended to reach families with a household member diagnosed with asthma. In these families, energy efficiency and indoor air quality

⁴ The California PUC is exploring a decision to reduce the conflict that exists between cost effectiveness and other policy objectives, such as equity and support for the energy efficiency market (CPUC 2021).

improvements are combined to provide both energy savings and a safe, healthy living environment. MCE has also launched programs specifically targeting affordable housing for energy efficiency upgrades.

Recommendations: How CCAs Can Engage in Energy Efficiency

CCAs are uniquely positioned to engage their customers and may be able to enhance energy efficiency efforts by targeting hard-to-reach community members and leveraging existing relationships. However, CCAs also face resource and regulatory limitations that can constrain their capacity. Utilities have a longer history of offering energy efficiency programming and a larger pool of resources. Within this context, we make recommendations for CCAs considering their approach to energy efficiency. If the programs already offered to a CCA's customers are robust, a CCA may best serve its interests by helping to connect its customers to existing programs, serving as a "connecting" CCA. In places where a CCA identifies gaps in customers reached or insufficiencies in existing utility programs, developing its own programming in an "offering" or "complementing" framework may be effective. A CCA's capacity and regulatory context may guide what programs they are allowed to pursue and will also inform the most effective approach to providing energy efficiency services to their customers. As shown in figure 4, to understand their local energy efficiency context, CCAs can consult with local community organizations, survey community members, and meet with regulatory and utility staff.

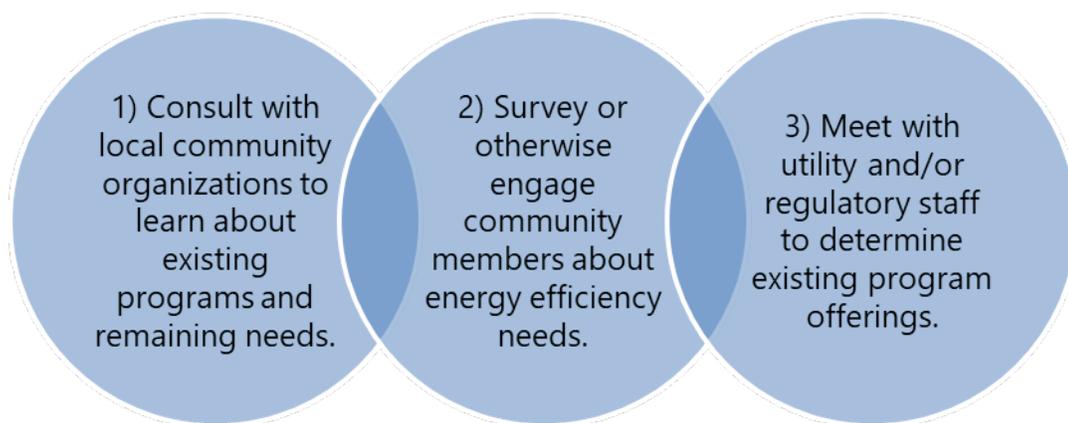


Figure 4. Evaluating a city's energy efficiency context

If a community is served by a large utility, CCA staff can also use ACEEE's *Utility Energy Efficiency Scorecard* as a resource to understand a utility's existing programs (Relf et al.

2020). Table 8 offers recommendations for a CCA’s energy efficiency engagement level based on the local energy efficiency context.

Table 8. Recommended energy efficiency engagement level for local energy efficiency context

Local energy efficiency context	Recommended EE engagement level for CCA
Utility offers insufficient or ineffective energy efficiency programs, and CCA customers are significantly underserved. CCA has developed community connections and resources necessary to design and administer programs effectively.	<i>Offering:</i> CCA directly offers a suite of energy efficiency programs, serving as a primary energy efficiency resource for its customers. This approach may serve to demonstrate new program models. While “offering” programs may fill gaps in existing utility programs, this is not their primary intention.
Utility offers some robust programs, but CCA customers, or a segment of them, are underserved or existing offerings do not reach marginalized communities	<i>Complementing:</i> CCA provides targeted programs to complement existing utility offerings and improve efficacy or reach underserved populations. “Complementing” programs attempt to fill gaps in existing utility programs.
Utility offers effective and robust programs that target equity and reach all segments of the community	<i>Connecting:</i> CCA guides customers to existing utility and government programs and serves as a conduit of information

Conclusion

Cities often pursue aggregation in service of goals related to sustainability, economics, and equity. As the CCA landscape develops, the local control afforded by aggregation has the potential to advance equity in communities and desired economic outcomes at the local level as communities choose energy sources and implement targeted programs.

While opportunities for successful, local energy efficiency efforts have been specifically identified as benefits of community choice aggregation (Burke, Finn, and Murphy 2005; McGee and Swaroop, 2020; Jung 2017; Clegg 2019), we find that most CCAs are not pursuing energy efficiency. In examining existing CCA efforts to implement energy efficiency programs, we have highlighted existing models and identified opportunities for CCAs to use energy efficiency in service of their missions. Summarizing the findings from this research, the questions in figure 5 can guide cities in both determining their approach and implementing their initiatives.

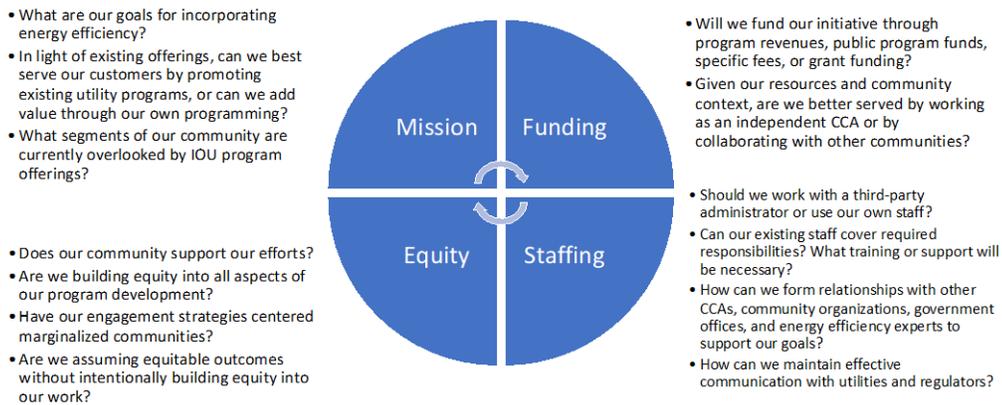


Figure 5. Guiding energy efficiency questions for cities pursuing a CCA

We have also explored the barriers that cities face in incorporating energy efficiency, as well as contextual regulatory and legislative factors that influence program opportunities. Our research suggests that CCAs and communities pursuing energy aggregation can be more successful at realizing the benefits of energy efficiency programming by sufficiently resourcing their programs, developing partnerships, and garnering community support. A clear recognition by the city of the relevance of energy efficiency to the CCAs mission and goals can facilitate the development of meaningful programs. Similarly, integrated focus on processes and outcomes related to equity is important for CCAs. Careful attention to equity can ensure that the benefits of aggregation are shared fairly among community members. Attention to these barriers and opportunities can help community choice aggregation reach its energy efficiency potential.

In places where existing utility energy efficiency offerings are not robust or do not reach all segments of the community, particularly low-income communities and communities of color disproportionately burdened by energy costs and climate impacts, CCAs can develop and offer complementary programming for their community, serving in an “offering” or “complementing” role. Where existing programs are effective and equitable, cities with CCAs can serve as “connectors,” directing their customers to existing programs and working to increase participation. Capacity and regulatory circumstances influence a CCA’s possible routes to engagement, but cities miss an opportunity to advance their sustainability, climate, and economic goals by disengaging from energy efficiency and not considering the most impactful ways they can harness its benefits for their community.

References

- Baker, S. 2021. *Revolutionary Power: An Activist's Guide to the Energy Transition*. Washington, DC: Island Press.
- Burke, G., C. Finn, and A. Murphy. 2005. *The Viability of AB 117 and Its Role in California's Energy Markets*. San Francisco: CPUC (California Public Utilities Commission). localcleanenergy.org/files/goldman%20on%20CCA%20for%20CPUC.pdf.
- CAL CCA. 2021. "Number of CCA Communities in California Hits 200 Mark." cal-cca.org/number-of-cca-communities-in-california-hits-200-mark/.
- California Department of Education. 2020. "California Clean Energy Jobs Act (Proposition 39)." www.cde.ca.gov/ls/fa/ce/#:~:text=Proposition%2039%2C%20a%20voter%20approved,%2D14%20through%202017%2D18.
- Cassman, J., and J. Savaree. 2002. *Joint Powers Authorities: Opportunities & Challenges*. San Francisco: Hanson, Bridgett, Marcus, Vlahos & Rudy, LLP; San Carlos, CA: Aaronson, Dickerson, Cohn & Lanzone. www.cacities.org/getattachment/5768b027-71a7-4bc5-8d82-d2009f304297/LR-Cassman.
- CEDARS (California Energy Data and Reporting System). 2021. "CEDARS." cedars.sound-data.com/filings/list/2020/?include_c_n_s=true&include_cca_rens=true.
- Chhabra, M. 2020. "Here's How to Bring Out the Best in Energy Efficiency." *NRDC Expert Blog*, July 13. www.nrdc.org/experts/mohit-chhabra/heres-how-bring-out-best-energy-efficiency.
- CLC (Cape Light Compact). 2020a. *Cape Light Compact JPE: Plan-Year Report on Energy Efficiency Activities for 2019*. D.P.U. 20-50, May 29. Boston: Massachusetts DUP (Department of Public Utilities). ma-eeac.org/wp-content/uploads/CLC-2019-Plan-Year-Report_2020.05.29.pdf.
- . 2020b. *Leading the Way Forward: 2019 Annual Report*. Yarmouth, MA: CLC. 3jy14ha9u771r7qzn35g0s6c-wpengine.netdna-ssl.com/wp-content/uploads/2020/12/Cape-Light-Compact_2019-Annual-Report_508_FINAL.pdf.
- . 2021a. "Comprehensive Assessments for Existing Buildings." www.capelightcompact.org/existingbuilding/.
- . 2021b. "Energy Efficiency Programs." www.capelightcompact.org/energy_efficiency/.
- . 2021c. "Home Energy Assessments." www.capelightcompact.org/home-energy-assessments/.

- . 2021d. "Mass Save® HEAT Loan." www.capelightcompact.org/home-energy-assessments/heat/.
- . 2021e. "Rebates for Your Home." www.capelightcompact.org/resrebates/.
- . 2021f. "Residential New Construction, Renovations, and Additions." www.capelightcompact.org/home-energy-assessments/residential-new-construction/.
- Clegg, M. 2019. *Community Choice Aggregation: Technologies, Institutions, and Values*. Santa Barbara: University of California, Santa Barbara. escholarship.org/uc/item/1sm3x300.
- Community Power Coalition of New Hampshire. 2021. "Members." cpcnh.org/members.
- CPUC (California Public Utilities Commission). 2021. *Assessment of Energy Efficiency Potential and Goals and Modification of Portfolio Approval and Oversight Process; Proposed Decision*. Rulemaking 13-11-005, April 16. San Francisco: CPUC. docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M378/K256/378256443.PDF.
- Dodman, D., and D. Satterthwaite. 2009. "Institutional Capacity, Climate Change Adaptation and the Urban Poor." *IDS Bulletin* 39 (4): 67–74. onlinelibrary.wiley.com/doi/10.1111/j.1759-5436.2008.tb00478.x.
- Drehobl, A., L. Ross, and R. Ayala. 2020. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States*. Washington, DC: ACEEE. www.aceee.org/research-report/u2006.
- EBCE (East Bay Community Energy). 2021a. "Business Programs: Energy Efficiency Data Sharing." ebce.org/ee-data/.
- . 2021b. "Business Programs: Upgrade to Clean Power Appliances." ebce.org/clean-power-appliance-business/.
- . 2021c. "EBCE Pays for Energy Saving Performance." *From the CEO's Desk Newsletter*, March 9. ebce.org/news-and-events/ceos-desk/ebce-pays-for-energy-saving-performance/.
- . 2021d. "Residential: Heat Pump Water Heater." ebce.org/hotwater/.
- . 2021e. "Residents: Compare Your Options." ebce.org/compare-plans-residential/.
- EPA (Environmental Protection Agency). 2021. "Community Choice Aggregation." www.epa.gov/greenpower/community-choice-aggregation.
- Gunther, S., and D. Bernell. 2019. "Challenging the System: The Role of Community Choice Aggregation in California's Transition to a Renewable Energy Future." *The Electricity Journal* 32 (10): 106679. doi.org/10.1016/j.tej.2019.106679.

- Hess, D. 2019. "Coalitions, Framing, and the Politics of Energy Transitions: Local Democracy and Community Choice in California." *Energy Research & Social Science* 50 (April): 38–50. doi.org/10.1016/j.erss.2018.11.013.
- Hoerner, J., and N. Robinson. 2008. *A Climate of Change: African Americans, Global Warming, and a Just Climate Policy for the U.S.* Oakland: EJCC (Environmental Justice and Climate Change Initiative). www.reimaginerpe.org/cj/research/climateofchangeafricanamericans.
- Hudson Valley Community Power. 2021. "What Is Hudson Valley Community Power?" www.hudsonvalleycommunitypower.com/about.
- IPCC (Intergovernmental Panel on Climate Change). 2007. *Climate Change 2007: The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. New York: Cambridge University Press. www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-frontmatter-1.pdf.
- Jesdale, B., R. Morello-Frosch, and L. Cushing. 2013. "The Racial/Ethnic Distribution of Heat Risk-Related Land Cover in Relation to Residential Segregation." *Environmental Health Perspectives* 121 (7): 811–7. ehp.niehs.nih.gov/doi/10.1289/ehp.1205919.
- Jung, S. 2017. *A Just Transition: Energy Democracy, Community Choice Aggregation, and the Im(Possibilities) of Change*. Cambridge: Massachusetts Institute of Technology. dspace.mit.edu/handle/1721.1/111393.
- Kennedy, S. 2017. *'Greening' the Mix through Community Choice*. Los Angeles: UCLA Luskin School of Public Affairs, California Center for Sustainable Communities at UCLA. www.ioes.ucla.edu/publication/greening-mix-community-choice/.
- LCE (Lancaster Choice Energy). 2018. "State Approves Lancaster Choice Energy's Energy Efficiency Program Plan; LCE the First CCA in Southern California to Be Approved." www.lancasterchoicenergy.com/2018/05/22/state-approves-lancaster-choice-energys-energy-efficiency-program-plan-lce-the-first-cca-in-southern-california-to-be-approved/.
- LEAN Energy US (Local Energy Aggregation Network). 2021. "CCA By State." www.leanenergyus.org/cca-by-state.
- Massachusetts Government. 2020. "Municipal Aggregation." mass.gov/info-details/municipal-aggregation#approved-municipal-aggregations.
- MCE (Marin Clean Energy). 2019. *MCE 2019 Energy Efficiency Annual Report*. San Rafael: MCE. www.mcecleanenergy.org/wp-content/uploads/2020/05/MCE-2019-Energy-Efficiency-Annual-Report.pdf.

- . 2020. *MCE'S 2020 Programs: Increasing Access to Clean Energy Technologies and Services*. San Rafael, CA: MCE. www.mcecleanenergy.org/wp-content/uploads/2020/11/MCE-Program-Offerings-Leave-Behind-1-pager.pdf.
- . 2021. "Your Energy Choices." www.mcecleanenergy.org/residential/#choices.
- McGee, A., and S. Swaroop. 2020. "The Power of Power: Democratizing California's Energy Economy to Align with Environmental Justice Principles through Community Choice Aggregation." *Ecology Law Quarterly* 46 (4): 985–1016. doi.org/10.15779/Z38XK84R0H.
- Monk, F. 2020. *How Is Energy Justice Built into Community Choice Aggregation? A Comparative Case Study of the Lowell Community Choice Power Supply Program and Cape Light Compact, Massachusetts*. Keene, NH: Antioch University New England. aura.antioch.edu/cgi/viewcontent.cgi?article=1624&context=etds.
- Montgomery County, MD. 2021. "Maryland General Assembly Passes Community Choice Energy Pilot Program Enabling Montgomery County Residents More Affordable and Equitable Access to Renewable Energy." www2.montgomerycountymd.gov/mcgportalapps/Press_Detail.aspx?Item_ID=34083.
- Muro, M., A. Tomer, R. Shivaram, and J. Kane. 2019. *Advancing Inclusion through Clean Energy Jobs*. Washington, DC: Brookings. www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane.pdf.
- Nadel, S., and L. Ungar. 2019. *Halfway There: Energy Efficiency Can Cut Energy Use and Greenhouse Gas Emissions in Half by 2050*. Washington, DC: ACEEE. www.aceee.org/research-report/u1907.
- NCSL (National Conference of State Legislatures). 2015. "Community Choice Aggregation Policies." www.ncsl.org/research/energy/community-choice-aggregation.aspx.
- New York State. 2021. "Community Choice Aggregation." www3.dps.ny.gov/W/PSCWeb.nsf/All/82F83CAC4E71F05D8525835900429D8F?OpenDocument.
- OCC (Office of the Ohio Consumers' Council). 2021. *The Basics of Governmental Energy Aggregation: Consumers' Fact Sheet*. Columbus: OCC. www.occ.ohio.gov/sites/default/files/publications/aggregation/The_Basics_of_Governmental_Energy_Aggregation.pdf.
- Ohio Public Utilities Commission. 2021. "All Government Aggregators Web Application." puco.ohio.gov/wps/portal/gov/puco/utilities/utility-maps/allgovernmentaggregatorswebapplication.

- O'Shaughnessy, E., J. Heeter, J. Gattaciecceca, J. Sauer, K. Trumbull, and E. Chen. 2019. *Community Choice Aggregation: Challenges, Opportunities, and Impacts on Renewable Energy Markets*. Prepared by NREL (National Renewable Energy Laboratory). Washington, DC: DOE. doi.org/10.2172/1494285.
- Plug in Illinois. 2021. "List of Communities Pursuing an Opt-Out Municipal Aggregation Program." pluginillinois.org/MunicipalAggregationList.aspx?ob=1.
- RCEA (Redwood Coast Energy Authority). 2021a. *Community Report: RePowering Humboldt with Renewable Energy—2020 Annual Report*. Eureka, CA: RCEA. redwoodenergy.org/wp-content/uploads/2021/02/RCEA-Pullout-0204-centerfold.pdf.
- . 2021b. "Customer Programs." redwoodenergy.org/services/customerprograms/.
- Relf, G., E. Cooper, R. Gold, A. Goyal, and C. Waters. 2020. "The Utility Energy Efficiency Scorecard." www.aceee.org/utility-scorecard.
- Ribeiro, D., S. Samarripas, K. Tanabe, A. Jarrah, H. Bastian, A. Drehobl, S. Vaidyanathan, E. Cooper, B. Jennings, and N. Henner. 2020. *The 2020 City Clean Energy Scorecard*. Washington, DC: ACEEE. www.aceee.org/research-report/u2008.
- SJCE (San Jose Clean Energy). 2021 "About SJCE." sanjosecleanenergy.org/about-sjce/.
- Sonoma Clean Power. 2021. "Customer Programs." sonomacleanpower.org/customer-programs.
- Trabish, H. 2021. "As Utilities Match CCAs on Price, Aggregators Increase Climate Action, Grow Economies of Scale to Compete." *Utility Dive*, May 4. www.utilitydive.com/news/as-utilities-match-ccas-on-price-aggregators-increase-climate-action-grow/598177/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202021-05-05%20Utility%20Dive%20Newsletter%20%5Bissue:34041%5D&utm_term=Utility%20D.
- Trumbull, K., J. Gattaciecceca, and J. DeShazo. 2020. *The Role of Community Choice Aggregators in Advancing Clean Energy Transitions: Lessons from California*. Los Angeles: UCLA Luskin Center for Innovation. innovation.luskin.ucla.edu/wp-content/uploads/2020/11/The_Role_of_CCAs_in_Advancing_Clean_Energy_Transitions.pdf.
- Valley Clean Energy. 2021. "Energy Efficiency." valleycleanenergy.org/energy-efficiency/.
- Xia, L. 2017. *Growth and Impacts of California Community Choice Aggregation (CCA) Programs: Case Study of MCE, Marin Clean Energy*. Durham, NC: Duke University. dukespace.lib.duke.edu/dspace/handle/10161/14194.

Appendix A. Energy Efficiency Program Effectiveness

Due to the small sample size of energy efficiency initiatives offered by CCAs and the limited availability of data, it is not possible to draw broad conclusions on the effectiveness of CCA energy efficiency programs in terms of energy or cost savings compared to programs offered by IOUs.

Table A1 shows the Total Resource Cost (TRC) ratio of energy efficiency offerings by Marin Clean Energy.⁵ Although this is a small sample, the numbers illustrate that CCAs have the potential to offer cost-effective energy efficiency programs.

Table A1. 2020 MCE TRC—energy efficiency offerings

Program administrator	EE portfolio (all sectors)	Residential programs	Commercial programs	Industrial programs	Agricultural programs
MCE	1.01	1.07	0.90	1.17	1.12

Source: CEDARS 2021

Table A2 shows the TRC benefit-cost ratio of Cape Light Compact's energy efficiency offerings.

Table A2. 2019 CLC cost-effectiveness comparison—EE offerings

Program administrator	Benefit-cost ratio	Total TRC test benefits	Total TRC test costs
CLC	2.01	\$102,313,642	\$50,776,406

Source: CLC 2020a

⁵ Total Resource Cost (TRC) is regulators' principal metric for assessing energy efficiency program cost effectiveness and approving utility funding.

Appendix B. Methodology

We conducted semi-structured, in-depth interviews with CCA staff members and municipal staff members to understand the offerings of energy efficiency programs implemented by community aggregators. We also conducted interviews with other stakeholders such as advocates and organizing bodies heavily involved in aggregation efforts in a particular state. Interviews covered topics including primary goals for pursuing aggregation, funding sources for efficiency programs, future plans, challenges faced in incorporating energy efficiency, and information on contextual factors such as regulatory requirements. Interviews also included discussions of the public engagement practices of CCAs and their equity-focused goals and outcomes. Taken together, these interviews provided a valuable source of data on the goals, opportunities, and challenges to energy efficiency facing communities participating in community choice aggregation.

We conducted a total of 15 interviews, representing all seven states with aggregation programs. These interviews included perspectives from 12 community choice aggregation programs. We transcribed and coded interviews in NVivo, a qualitative data analysis software tool. We used qualitative codes to classify text and sorted text to observe interview themes.

To complement the qualitative data set drawn from interviews, we developed a data request to increase the size of the project sample and facilitate the collection of quantitative data. This data request solicited general information on current program offerings and consideration of energy efficiency by CCAs, including barriers and challenges. This data request served to increase the number of entities represented in the report, enhancing our ability to generalize.

Our guidance for researchers conducting interviews is reproduced below, as is our written data request.

IN-DEPTH INTERVIEW GUIDE

1. Please introduce yourself and tell me a bit about your organization's CCA program.
2. What were the primary goals when _____ decided to pursue CCA aggregation?
3. Is energy efficiency incorporated in your program in any way? If so, how?
4. How is your EE program funded?
5. Do you have any energy efficiency efforts planned for the future?
6. What are some of the challenges that you've faced in incorporating energy efficiency?

7. What PUC or policy efforts were necessary when undertaking your program?
8. What best practices did you find allowed for meaningful public engagement in developing your CCA program?
9. (For those with EE) What best practices did you find allowed for meaningful public engagement in your EE program?
10. What is the rate of participation in your EE program?
11. Does your CCA energy efficiency program include any equity-related goals or components? To what degree has equity been incorporated into program development and implementation?
12. Is there anyone else you think we should speak to about CCAs and energy efficiency?

WRITTEN DATA REQUEST

1. Has your CCA adopted any strategies or programs related to energy efficiency? If so, please describe. If not, has your CCA considered any energy efficiency strategies or programs? Please describe.
2. What should ACEEE staff know about energy efficiency in the context of a CCA?