

Challenges and Opportunities for Local Governments to Lead in Community Energy Resilience

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ABSTRACT

Local leadership is more critical than ever. This paper empowers public agencies with insights to advance equitable, community-driven energy resilience. Using practical examples, this paper highlights best practices, challenges, and opportunities for local governments to lead in advancing community energy resilience and identifies strategies to overcome barriers to developing viable local energy projects in municipal and community-owned spaces. It also introduces a framework for unlocking local clean energy, community energy resilience, and broader climate and sustainability goals. It shows how local governments can act to support resilience hubs—facilities equipped with islandable solar and battery storage microgrids that provide critical services to the community both during emergencies and under normal conditions. With local government leadership, resilience hubs can serve as a catalyst in addressing climate, sustainability, and decarbonization goals while fostering community-wide transformation for shared economic benefits.

The integrated governance at the heart of the proposed framework is not just a model to streamline and scale energy resilience; it builds the shared systems infrastructure needed for much broader collective impact across a wide range of local clean energy and decarbonization goals. The paper covers (1) challenges to individual local government action and limitations of one-off grant-funded projects, (2) best practices for resilience hub planning, procurement, and financing, and (3) a framework for leveraging regional governance structures to accelerate resilience hub implementation. While this paper draws insights from a variety of local government-led programs and state-funded projects in California, it also identifies avenues for applying this framework in other states.

Introduction

Resilience hubs have become significantly more popular due to the expanding number and severity of climate-driven emergencies. The Urban Sustainability Directors Network (USDN) defines resilience hubs as “community-serving facilities augmented to support residents and coordinate resource distribution and serve before, during, or after disruptions” (Baja 2019). For purposes of this paper, we use the term resilience hubs broadly to include a range of facilities equipped with islandable solar and battery microgrids (systems able to disconnect from the utility grid and operate autonomously) that serve a public purpose during grid outages. These include municipal sites with backup power to support critical services, such as fire departments, as well as sites that leverage established, trusted, and community-managed facilities used year-round as neighborhood centers for community-building activities. Resilience hubs are a core element of community resilience because they can simultaneously strengthen emergency management, reduce climate pollution through distributed clean energy, and strengthen community bonds through year-round supportive services.

Local governments are central to accelerating the development of resilience hubs. They are uniquely positioned to lead community energy resilience because they control facilities, have land use authority, lead emergency management functions, and have established communication networks. Local governments also maintain a fabric of trusted relationships with the community that are essential for equitable design and service delivery. However, while some jurisdictions have dedicated sustainability staff and funding streams, most face limited fiscal capacity, competing mandates, and staffing constraints that limit their ability to address energy resilience. Climate vulnerability planning and energy resilience initiatives can compete with legally mandated public safety and social service responsibilities.

Despite these constraints, many local governments are eager for strategies to embed community resilience into core planning and governance functions. They are seeking opportunities to deploy resilience hubs and support a more resilient decentralized electricity grid through local clean energy.

Two recent legislative developments in California are attempting to accelerate local climate resilience efforts, including the deployment of resilience hubs, but both have important limitations. Senate Bill 852 aims to unlock funding for Climate Resilience Districts (CRDs), but this strategy requires specialized knowledge, start-up costs, and contains some legal ambiguity (CA FWD 2026). Assembly Bill 39 requires municipalities with a population greater than 75,000 residents to adopt specific electrification plans to increase local energy reliability by January 1, 2030, but does not provide funding for implementation (Assembly Bill 39, website accessed July 2026).

This paper provides a framework for resilience hub planning, design, and implementation that is ready to be replicated and scaled now. The framework leverages existing ratepayer resources through **regional energy networks (RENs)** and **community choice aggregators (CCAs)**, entities composed of and run by local governments. RENs are coalitions of local governments authorized by the California Public Utilities Commission (CPUC) to use utility ratepayer funds to deliver energy efficiency and decarbonization programs in their regions (Kaur et al. 2024). CCAs are locally governed load-serving entities with boards of directors composed of elected local government officials who procure electricity for their communities.

The paper's proposed framework encourages local governments to lead by aligning policies, integrating programming, and combining their resources with those of RENs and CCAs. Unlike the concept of CRDs as envisioned by SB 852, which faces an uphill battle for implementation, this framework is ready to start creating climate resilience benefits immediately. However, the alignment of resources promoted by the paper can serve as a pathway to comply with Assembly Bill 39 by creating and adopting comprehensive plans to meet clean energy and electrification goals.

We acknowledge that this framework focuses on CCAs and RENs, which are widespread throughout California, and while there may not be exact analogs in other states, the paper discusses how the framework can galvanize similar outcomes elsewhere.

Background

The following local government and public agency programs provide inspiration for this paper:

- **Southern California Regional Energy Network (SoCalREN)** – [Energy Resilience Action Plan program](#). SoCalREN offers a suite of no-cost energy programs across 13

counties. Among these offerings, the Energy Resilience Action Plan (ERAP) program helps public agencies develop resilience roadmaps to strengthen critical infrastructure via resilience hubs within their communities. ERAP supports regional planning, prioritization, and the design of shovel-ready resilience hubs. Since 2022, ERAP has served over 30 local governments and communities. The Energy Coalition (TEC) implements the ERAP program under contract with Los Angeles County, the SoCalREN Portfolio Administrator. This program serves as a model for regionally coordinated planning and assessment.

- **Ava Community Energy (Ava) – [Community Resilience Hubs Initiative](#)**. Ava serves Alameda County and the San Joaquin County cities of Tracy, Stockton, and Lathrop, with service expanding to unincorporated San Joaquin County. The Community Resilience Hubs Initiative funds community organizations to help identify community-owned resilience hub sites within Ava’s service territory. In addition to community engagement and site identification, the initiative offers technical assistance for project development and incentives toward project costs. This program serves as a model for planning, procurement, and implementation
- **Clean Power Alliance (CPA) – [Power Ready program](#)**. CPA is a Community Choice Aggregator (CCA) serving 36 cities within Los Angeles and Ventura counties, plus unincorporated areas. The Power Ready program partners with CPA member agencies to implement resilience hubs at essential municipal facilities. This program serves as a model for planning, procurement, and implementation.
- **Strategic Growth Council (SGC) – [Transformative Climate Communities \(TCC\) program](#)**. SGC is a California state agency that coordinates investments to support sustainable communities, climate action and resilience, and equitable economic development. The TCC program offers grants for community-led climate and equity projects. In 2024, TEC secured a \$20M TCC implementation grant ([Pomona ACTS](#)) in partnership with the City of Pomona and numerous non-profit organizations.
- **California Energy Commission (CEC) – Advanced Energy Community grant**. The CEC is responsible for overseeing energy planning and policy for the state and for advancing clean energy innovation. The Electric Program Investment Charge ([EPIC](#)) is one of the funding vehicles for clean energy innovation, supporting both technology development and deployment. In 2020, TEC secured a \$9M EPIC implementation grant for the Bassett Avocado Advanced Energy Community ([BAAEC](#)) project in partnership with numerous technology partners and non-profit organizations.

Three major challenges constrain local governments from leading in energy and community resilience: (1) staff capacity, (2) public-agency-specific procurement policies, and (3) paying for projects. Even when strong resilience plans are developed, these challenges make it difficult to complete projects.

Staff capacity is a consistent challenge to advancing resilience projects for local governments. Even with strong interest and commitment, it is difficult to maintain sustained engagement from early planning through implementation. While some governments have policies to conduct resilience planning, there is a significant gap in resources and expertise to translate planning into implementation.

Procurement is the process of sourcing, negotiating, and executing a contract with an implementing contractor for a project. Complex procurement requirements, put in place to

safeguard public funds, are a significant challenge for public agencies because they are time- and resource-intensive and can stifle innovation. Clean energy projects are particularly susceptible to this hurdle. A 2018 ACEEE Summer Study paper that reviewed 250 public energy efficiency projects and 9 procurement pathways found that there is no one-size-fits-all solution to streamline procurement at the local level (Bugarin et al. 2018).

Finally, with limited budgets and many competing priorities, paying for energy projects is a challenge for local governments. Indebtedness or debt management policies constrain how cities approach commercial financing. And while the long-term goal is to transition toward locally sustainable funding sources, such as dedicated local revenues, utility investments, or revolving financing mechanisms, limited financial resources and staff capacity frequently constrain communities' ability to develop and scale these funding and financing models (Morales 2012).

How Local Governments—through CCAs and RENs—Can Lead The Way

The challenges described above are significant but solvable. In California, RENs and CCAs are increasingly demonstrating they are well-positioned to help local governments complete clean energy projects. This is the primary pathway discussed in this paper, but a section toward the end addresses opportunities to scale resilience hubs outside of California or in areas without CCAs.

As shown in Figure 1, the combined service territories of California's authorized RENs span a substantial share of the state, reflecting both geographic reach and institutional presence (CalCCA 2026 and CalREN 2026, website accessed July 2026). Operating across large regional service territories, RENs can coordinate and assess resilience efforts at a scale that individual jurisdictions cannot replicate on their own. When combined with CCAs, much of California is already served by public-purpose energy institutions with the mandate and infrastructure to advance resilience investments at scale. As discussed later, local governments outside of CCA and REN territory can work through their regional council of governments.

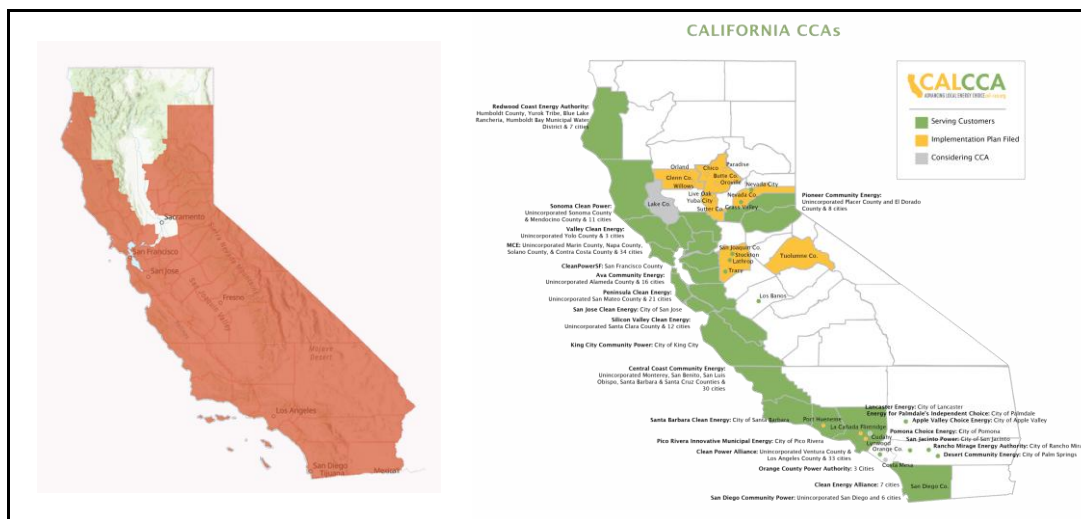


Figure 1. Service Territories of Regional Energy Networks (left) and Community Choice Aggregators (right)

RENs, such as SoCalREN, play a critical role by delivering no-cost technical assistance, portfolio-level analysis, and structured stakeholder engagement. These services help agencies identify, scope, and prioritize resilience hub investments. CCAs, including Clean Power Alliance and Ava Community Energy, complement this work by leveraging their procurement authority, ratepayer programs, financing tools, and community partnerships to move projects from planning to construction. As of early 2026, there are 25 CCAs in operation throughout California, serving 200+ cities and counties and representing over a third of the state's population. The capacity of each CCA to support local programs and reinvest in their communities varies. Some are paving the way with innovation and impact. All are mission-aligned and can deliver community-specific solutions that advance affordability, decarbonization, and energy resilience.

When aligned, these entities create a continuum from planning to implementation: RENs build the project pipeline and CCAs help execute it. The following sections explore how these models are being operationalized in practice and how they can underpin an integrated, shared systems infrastructure to scale community resilience across California.

Resilience Hub Planning - A Regional Approach Model from RENs

Resilience hub development begins far before infrastructure investments are made. Identifying appropriate sites, evaluating facility readiness, and building community support requires sustained planning, technical analysis, and stakeholder engagement.

RENs have the regional reach necessary to conduct portfolio-wide assessments, identify priorities across jurisdictions, and deliver consistent technical support while remaining responsive to local context. Many RENs throughout California are already leveraging their position to support early-stage energy resilience planning through various programs and pilot initiatives. Notably, SoCalREN's ERAP program provides comprehensive support for resilience planning (SoCalREN, website accessed July 2026). The process of community-informed site selection, detailed below, includes identifying priority communities, performing facility screening, and building a pipeline of shovel-ready resilience hub projects.

Identification of Priority Communities. The planning and site identification phase of resilience hub development requires data-driven analyses, technical expertise, and deep knowledge of local conditions. RENs' established relationships with public agencies and influential community organizations give them a distinct advantage in all three areas.

ERAP was designed to prioritize support for the communities most exposed to climate risk and with the least resources to prepare for and recover from climate hazards. To make the program more equitable and replicable, ERAP developed regionally specific, multi-factor vulnerability assessments to help program implementers identify which public agencies should be prioritized for services. These assessments evaluated multiple dimensions of vulnerability, including social sensitivity, exposure to climate hazards, accessibility to existing resources, and historical program engagement. By integrating these factors, the assessment provided a transparent, data-driven, and locally grounded process for selecting early participants across a large and diverse region. A regional climate vulnerability assessment was developed in 2022 through a collaboration among the Gateway Cities Council of Governments (a regional partner with SoCalREN), TEC, and Neighborhood Data for Social Change's Civic Support Enterprise to inform agency prioritization (Neighborhood Data for Social Change 2022). Through this

collaboration, SoCalREN identified the first three cities to participate in the ERAP pilot, serving as a proof-of-concept.

Site Identification and Facility Screening. SoCalREN’s ability to conduct facility screening is grounded in years of supporting public agencies with energy benchmarking and facility portfolio analysis. This work built the data infrastructure and institutional knowledge that underpins ERAP’s site identification process. SoCalREN’s established access to customer utility data, per CPUC Decision 23-02-002, allows it to conduct the kind of facility-level analysis that agencies cannot easily replicate on their own (California Public Utilities Commission 2023).

The ERAP process involves developing a Resilience Hub Opportunity Assessment (RHOA). The RHOA evaluates facilities within an agency’s portfolio using a seven-parameter scoring methodology (Figure 2), with each parameter equally weighted and normalized to a 100-point scale. Facilities are ranked based on their suitability to serve as resilience hubs and the highest-scoring facilities advance to a detailed follow-up analysis. This methodology provides a transparent, reproducible approach to site selection, enabling agencies and community stakeholders to understand how facilities were evaluated and prioritized.

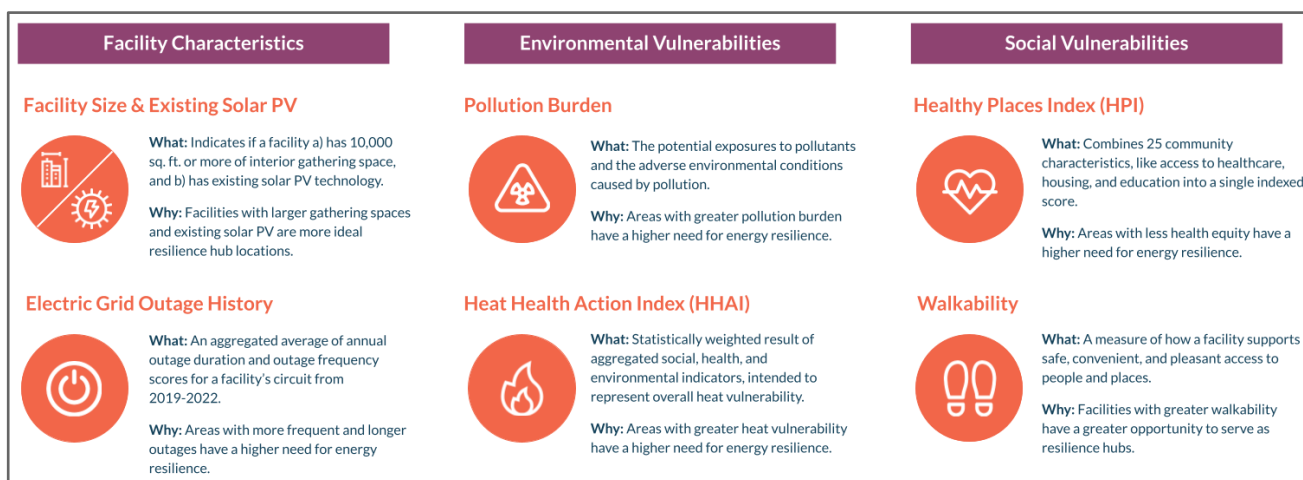


Figure 2. Scoring Parameters for RHOA (Source: SoCalREN ERAP program)

Building a Pipeline of Resilience Hub Projects. One of ERAP’s core objectives is to develop energy resilience project pipelines: a portfolio of well-defined, technically assessed, and community-validated resilience projects. By taking on the planning and technical analysis burden and providing services at no cost, RENs like SoCalREN effectively lower the barrier for agencies to pursue resilience infrastructure, turning an overwhelming process into a fundable, actionable list of shovel-ready projects.

Prior to 2025, RENs were unable to directly support planning for resilience capital projects because their utility ratepayer funding was strictly limited to energy efficiency programs. As a result, SoCalREN leveraged supplemental funding from Los Angeles County’s Federal Energy Efficiency and Conservation Block Grant to conduct the technical analysis needed to advance resilience hub planning under ERAP. The CPUC’s 2025 decision to allow RENs to provide integrated demand side management (IDSM) technical assistance removed a significant barrier and opened new pathways for advancing resilience efforts.

Community-Informed Site Selection. Data-driven facility identification works best when paired with open dialogue that surfaces factors like facility ownership structures, lease agreements, operational constraints, and political considerations. These details only emerge through direct engagement with agency stakeholders. In practice, agencies sometimes advocate for facilities that do not rank highly in the ERAP assessment but carry strong justification beyond the scoring criteria. Once top candidate sites are identified, agencies select two to three facilities for inclusion in a community survey co-developed with community partners. The survey gathers resident input on hub locations and priority services, validating or reshaping site selection priorities and building the trust a facility needs to function as a true resilience hub. During ERAP's pilot phase through 2025, more than 1,400 community members were engaged and over 60 public agency staff actively participated in ERAP's planning efforts.

Another program with stakeholder engagement best practices is Ava Community Energy (Ava), which developed the Critical Municipal Facilities (CMF) program to develop resilience hubs in six participating cities (Ava Community Energy, website accessed July 2026). Ava administers the full project process through strategies designed to support and leverage the scale of its 16-member cities and two counties. Originally focused on municipal facilities, the CMF program expanded to include community-owned sites in response to community feedback and the expressed desire for co-development and community ownership of resilience hubs. Through a competitive process, Ava selected a lead consultant and a team of six community partners to develop community-owned resilience hubs. The community partners ensure that community outreach, listening sessions, workshops, and resilience readiness tools are designed to empower communities, not just inform them, and that authentic community organizing is central to identifying hub sites from the start.

Resilience Hub Procurement - Best Practices from CCAs

Programs like ERAP and CMF demonstrate an effective process for identifying resilience hub sites, conducting technical assessments, and building community support. Once projects are defined, local governments face a second capacity barrier: navigating the complexity of building projects. While California is allowing more activities to be conducted by RENs under ratepayer funded programs (as noted above), they still operate within structural and funding constraints that limit the extent to which they can support implementation. CCAs, however, are public agencies with unencumbered funds, established procurement authority, and direct accountability to member jurisdictions. Therefore, they are uniquely positioned to help local governments move from project pipeline to deployed infrastructure in ways that ratepayer-funded programs cannot. Structured as joint powers authorities (JPAs) under California law, CCAs are public entities governed by a Board of Directors made up of elected officials, each representing a CCA member agency. Since board members serve without salary and represent the interests of their respective jurisdictions, CCAs are an extension of local governments and accountable to the communities they serve.

As JPAs, CCAs are authorized to conduct competitive procurement on behalf of their member agencies. A CCA can innovate and build on the best available program practices, operating more efficiently than when municipalities act alone. CCAs can take projects from design to implementation, with the expertise of their contracted technical consultants and advisors. Both Ava's CMF and CPA's Power Ready programs are examples of how a CCA can deliver a turnkey project delivery process that creates community benefits and reduces costs

through efficiencies of scale. The following details of the Power Ready program illustrate the programmatic value developed by the CCA and made available to member agencies.

Power Ready Program Basics. Through a competitive procurement process, CPA selected a developer to build, finance, own, and operate solar and battery systems for 20 years at selected municipal facilities across member agencies. At the end of the term, the equipment can be removed, or the member agency can choose to purchase it from the developer. Their turnkey model features the following design elements:

- The program offers solar and battery storage to member agencies at no upfront cost. System savings are captured on the utility bill and help pay for the project over time.
- CPA purchases the energy and capacity generated by the system. CPA's special tariff ensures that electricity costs are equal to or less than if there was no project.
- During normal grid conditions, the system provides benefits to CPA, including event-based demand response and load shifting from high time-of-use periods.
- When the grid is down, member agencies receive backup power that keeps the facility operational.
- The member agency has a roof lease agreement with the developer, under which the developer assumes responsibility for the repair and maintenance of the solar and battery storage system and for any roof or structural improvements made to enable installation of the renewable energy system.
- Agreements include an initial Memorandum of Understanding (MOU) between CPA and the participating agency, a site-specific power purchase agreement (PPA), and a general program PPA between CPA and the developer.

Power Ready Program History. The following program development timeline shows the effort it takes to create the Power Ready program. CPA invested approximately \$1.2M in third-party technical assistance to design the program, plus a substantial investment of their own staff labor.

- **2020 – Program Development.** CPA issued a request for information (RFI) to member agencies, which shaped internal efforts that eventually became Power Ready. CPA selected a consultant through a competitive process to conduct site inventories and assessments, and to support developer procurement planning.
- **2021 – Site Identification and Due Diligence.** 27 member agencies submitted more than 100 sites for consideration, which resulted in 26 viable candidates for resilience hubs.
- **2022 – Agency Commitments and Program Readiness.** Participating agencies executed MOUs with CPA, and CPA selected sites and program structures for implementation.
- **2023 – Developer Procurement & Program Expansion.** CPA launched a two-stage Power Ready request for offers (RFO) to procure a resilience hub developer for 11 agencies.
- **2024 – Round 1 Execution and Round 2 Launch.** CPA executed PPAs for 11 round 1 sites. Simultaneously, CPA launched round 2, opening eligibility to up to 250 municipal, public agency, special district, and nonprofit sites. A new consultant was selected to provide technical assistance and program support.

- **2025 – Implementation and Expansion.** CPA advanced round 1 projects with urgency amid federal ITC changes. Round 2 due diligence continues (enrollment open through November 1, 2026).

The Power Ready program streamlines and aggregates projects across municipalities. It would be prohibitively expensive and impractical to create such a program at an individual city or county scale.

CCA Program Contract Structure and Resilience Hub Financing

As noted earlier, paying for resilience hubs is a challenge for local governments. As load-serving entities, CCAs can offer on-bill repayment options to finance resilience projects. CPA and Ava are examples of CCA programs that create turnkey no-cost opportunities via a scalable contract structure, including on-bill repayment and third-party PPAs. The vetted operations and maintenance and performance-based nature of the PPA ensures that the developer, as owner and operator, is incentivized to keep the systems performing to the benefit of all parties, including the member agency. In fact, the CCAs' processes ensure that insurance, operations and maintenance, and other risks are well managed. Figure 3 summarizes the general contractual arrangements, benefits, and responsibilities of the Ava and CPA programs.

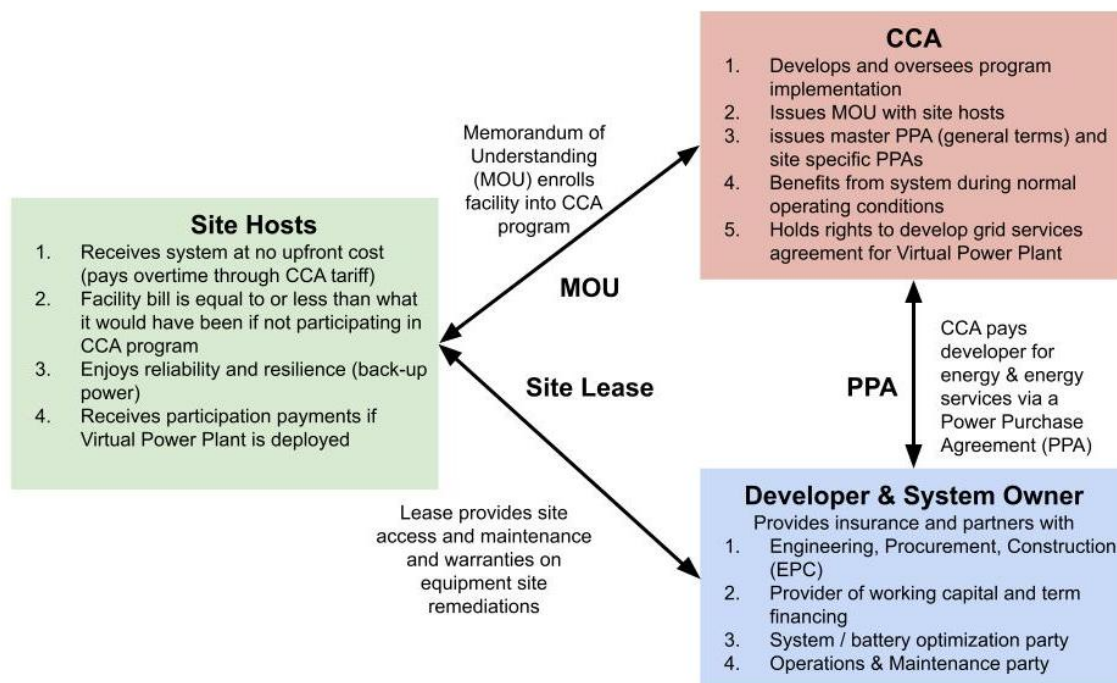


Figure 3. Scalable Resilience Hub Contract Structure and Financing Mechanism

Project-by-Project Approach Examples

Over the last five years, TEC has used grant funding from the CEC and SGC to advance community resilience hubs. The EPIC and TCC funding programs offered by the CEC and SGC respectively give local governments opportunities to engage with mission-aligned stakeholders,

secure funding and technical assistance, and advance community climate priorities. The following grant-funded projects illustrate the need for an integrated, systems-based inter-agency approach to resilience hub development.

Pomona Activated for Community Transformation and Sustainability (Pomona ACTS)

Pomona ACTS is a community-led climate and resilience initiative funded with \$22 million by the SGC TCC program. Pomona ACTS is a collaboration across local government, community-based organizations, technology providers, and residents. Among its cross-sector portfolio of strategies is a community energy resilience hub at a municipal site (Palomares Park Senior Center). At the time this paper was written, the resilience hub was in the early design phase. Despite having TCC grant funds, the City of Pomona has faced delays due to staffing limitations and uncertainty around procurement paths. For example, staff are unsure if it should be designed, built, and operated by a single company, or whether the design and engineering should be separate from the developer. They are uncertain about how a developer should be selected, and how equipment, sizing, and performance details and metrics will be decided. Ultimately, the grant funding does not remove all barriers to the project's design and implementation. Moreover, a one-time grant for a single facility is unlikely to build capacity or the required infrastructure for the City of Pomona to scale to additional sites and achieve broader community energy resilience.

The Bassett Avocado Advanced Energy Community (BAAEC)

BAAEC's goal was to demonstrate the value of distributed energy resources with a focus on low-income households in disadvantaged and underserved communities. Starting in 2020, with a \$9M CEC grant and \$10M in complementary grants, incentives, and match contributions, BAAEC encompassed numerous strategies, including a microgrid resiliency hub. The project development activities below span from late 2020 (after the original site host withdrew their participation) through April 2024:

- Identified a project developer to design, build, finance, and own and operate the project and conducted community engagement to identify a new site.
- Prepared a cost and savings estimate for a feasibility study that secured buy-in from the site host and produced a system design sufficient to secure utility interconnection plus a \$321,000 Self-Generation Incentive Program (SGIP) incentive for the battery system.
- Worked with facility staff to finalize site remediation and project design options that included roof replacements, tree removals, carport solar, and the location of the battery.
- Navigated extensive contract negotiations with the local government, reviewing commercial, performance, operations, maintenance, risks, and liabilities of the project.
- Worked with local government procurement staff to justify sole-source procurement, given that the grant significantly paid down the cost of the project. This would streamline project implementation by forgoing a competitive bid process.

Despite an incredible effort to develop the project, accumulated project delays made it impossible to complete the project before the favorable net energy metering (NEM) 2.0 tariff expired or to meet SGIP rebate reservation deadlines. The project economics became infeasible,

and the developer withdrew in April 2024. Even if the project had been successfully delivered, the process would not have been replicable.

A Scalable Community Resilience Framework for Local Governments

Shared Systems Infrastructure for Transformational Impact

The best practices from CPA, Ava, and SoCalREN, along with the demonstrated need for more streamlined, scalable solutions based on our experience with the Pomona ACTS and BAAEC grant projects, led us to propose a new framework for integrated collaboration on resilience hub development among local governments, CCAs, and RENs. This collaboration builds a “**shared systems infrastructure**,” a term we use to refer to critical business processes, tools, and services that are purposefully created to be used by multiple agencies.

Figure 4 is a conceptual depiction of how local governments can expand their climate resilience impact from incremental to transformational. It portrays local government leadership across three zones with increasing degrees of collaboration. We believe that the development of shared systems infrastructure is a key leverage point to move progress on resilience from incremental to transformational.

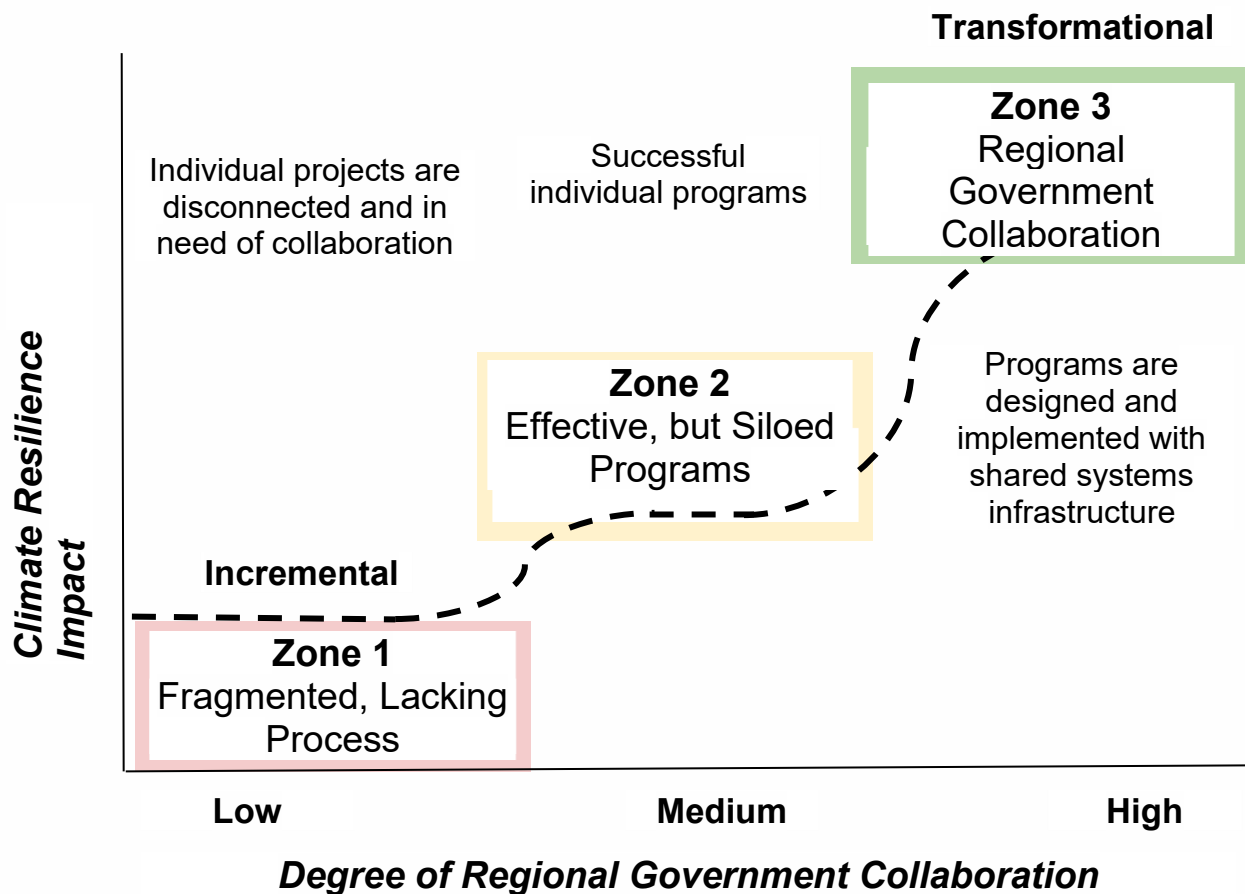


Figure 4. Conceptual depiction of government collaboration zones, program effectiveness, and relationship to climate resilience impact

Zone 1 represents existing individual programs or independent stand-alone projects operating without local government-defined processes and lacking coordination efforts. This is currently the most common scenario. For example, sites advanced through a grant-funded effort may be approved through a project-level economic criteria, but they may not align with priority sites identified through broader vulnerability assessments, community engagement, or REN planning processes.

Zone 2 represents effective but siloed programs such as those led by Ava and CPA. They build on best practices and complete successful projects but lack the systems infrastructure for broader scale. Each program started with municipal facilities and expanded to include funding for non-profit-owned community-serving sites. Ava engaged CBOs to define resilience hubs and prioritize community sites. The portfolio approach used by CPA (assessing local government facilities across municipalities) can lower costs and achieve scale, enabling more sites to be developed. In late 2025, CPA began considering how its program could be further streamlined if CPA were to own the solar and battery projects. Although individually effective, these programs could benefit from broader collaboration and shared systems infrastructure, which would also deliver substantial benefits to other RENs and CCAs who may not have the capacity to develop such programs from scratch.

Local governments could achieve transformational climate resilience impact through zone 3 strategies. In zone 3, regional government entities intentionally design shared systems infrastructure among mission-aligned stakeholders. They provide mutual support, break down silos, achieve efficiency, and avoid duplication. This approach unlocks funding and financing opportunities that would not be feasible to pursue otherwise: it is a force multiplier effect that builds scale and attracts investment.

A framework with shared systems infrastructure reduces administrative burden on agency staff, who can now join a regional effort, and it addresses the complexity of competitive procurement by allowing “piggybacking” on shared procurement processes. The larger scale and portfolio of projects approach allows local governments to better leverage their budgets and attract financing to fund projects. By working together, local governments don’t have to each learn how to complete resilience hub projects on their own. It makes resilience hub projects more realistic for a far greater number of individual agencies. As participation grows, so do the shared benefits and collective impact.

First Steps to Operationalize the Framework in California

For regions with overlapping CCAs and RENs, local governments in California can define clear roles for collaboration across each phase of resilience hub development, avoiding duplication of effort.

Table 1 identifies a framework of roles and responsibilities that can transform today's siloed efforts into an intentional, integrated collaboration that maximizes staff capacity, optimizes resources, aligns capital, and develops systems to streamline the design and delivery of programs and projects. In regions where resilience planning efforts are not funded, local governments can exert influence on RENs and CCAs to advocate for resources and programs. In places without CCAs or RENs, these principles can be applied to coordination with councils of governments (COGs) as discussed further in the next section.

Table 1. A proposed collaboration framework that builds on existing best practices in California

Resilience Hub Planning Phase - Regional Assessments		
Local Governments: Leverage existing staff working with municipal facility energy use data to support REN assessments.	RENs: Develop a comprehensive, regionally focused needs assessment and prioritization. Leverage consumption data and understanding of current CCA resilience program requirements to inform the targeting approach.	CCAs: Support REN's energy-related data collection needs to facilitate priority and needs assessment. Share program requirements with REN to inform targeting efforts.
Resilience Hub Planning Phase - Site Identification and Stakeholder Engagement		
Local Governments: Support data collection (municipal sites) and endorse community engagement (community sites).	RENs: Conduct a no-cost holistic site ranking assessment. Convene local government, community organizations, and other key stakeholders (including CCA). Coordinate with CCA to complement community engagement efforts.	CCAs: Allocate funding for community engagement. Coordinate with REN to conduct a gap analysis and implement assessments of community sites not covered by REN.
Resilience Hub Planning Phase - Technical Assistance		
Local Governments: Staff serve as project champions to support internal review, coordination, and approval processes.	RENs: Conduct no-cost on-site energy resilience audits to identify capital projects. Align deliverables with CCA procurement and financing requirements.	CCAs: Provide expertise to complement REN technical assistance and fill remaining gaps, such as in-depth project design support.
Resilience Hub Procurement Phase		
Local Governments: Agree to CCA-led competitive procurement process for the project developer.	RENs: Promote CCA procurement pathway as the preferred option. Collaborate with CCA to standardize piggy-backing contracts for non-CCA members.	CCAs: Provide full wraparound procurement support, similar to the CPA and Ava models.
Resilience Hub Financing & Project Delivery Phase		
Local Governments: Agree to CCA-led general terms and negotiate site-specific lease terms with the project developer.	RENs: Promote CCA financing pathway as the preferred option. Collaborate with CCA to standardize piggy-backing contracts for non-CCA members. Support CCA with project closeout efforts and cross-promote project successes.	CCAs: Negotiate financing terms based on scale and streamlined implementation benefits. Coordinate with RENs to provide project closeout support and cross-promote project successes.

Opportunity to Scale Outside of California or in Areas without CCAs

Although this paper focuses on aligning local government leadership via CCAs and RENs, the authors acknowledge the important and complementary work of COGs – associations of local governments that collaborate on regional issues. For example, COGs in California’s Inland Empire and Los Angeles County have conducted robust, grant-funded energy resilience planning work that supplements REN efforts. The proposed framework can be mirrored with the support of COGs in areas without CCAs or RENs, including outside of California. COGs are widespread and, in many regions, are already the most established vehicle for regional coordination. Typically organized as joint powers authorities, their legal structure and procurement authority position them to perform the same functions this paper promotes—sharing technical resources, streamlining procurement, and building shared systems infrastructure that no single jurisdiction could create on its own.

A Vision for Local Government Leadership and Broader Community Outcomes

Local governments can use resilience hubs to institutionalize an integrated approach to community programs with CCAs and RENs, creating a shared systems infrastructure to accelerate climate action and provide community-wide economic benefits. In this way, resilience hubs can serve as catalysts to scale solutions that help address broader climate, sustainability, and decarbonization goals, fostering community-wide transformation for shared economic benefits. Figure 5 depicts this catalyst concept. After first convening for resilience hub development, local governments, CCAs, and RENs can mobilize more resources and actions for broader community impact. For example, it can prepare local governments to support local community solar and successfully implement the comprehensive clean energy and electrification plans required by Assembly Bill 39. Local government leadership is needed to ensure that community priorities are at the center of these investments.

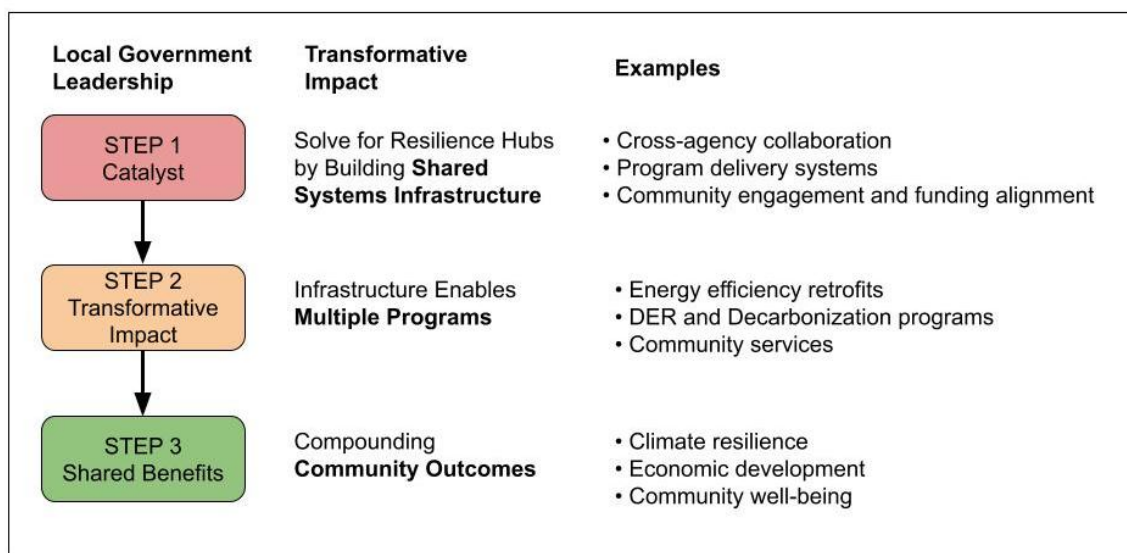


Figure 5. A Vision for Integrated Climate and Community Programs

Conclusion

By working together and leveraging each other's resources, progress towards community energy resilience can be streamlined, effective, and scalable. The proposed framework addresses local government challenges around staff capacity, complex procurement, and funding for resilience hub projects. It also addresses the limitations of one-off, grant-funded projects. The overlap between CCA and REN territories is extensive in California, and CCAs' growing sophistication allows them to provide procurement, financing, and community engagement support to complement REN services. A REN's ability to support integrated demand-side solutions makes it an essential partner in advancing community energy resilience. In states where CCAs and RENs are not prevalent, COGs offer an existing governance framework to champion and implement these strategies at a regional scale. The integrated governance at the heart of the proposed framework is not just a model to streamline and scale energy resilience; it builds the shared systems infrastructure for a much broader collective impact across a wide range of local clean energy and decarbonization goals. Future research should first focus on stakeholder convening (e.g., local governments, CCAs, RENs, developers, community stakeholders) to inform topics (e.g., legal, procurement, financing) for deeper due diligence to better quantify the benefits in terms of reduced costs, time, and complexity. Then, with more details and stakeholder input, the framework can be approved by the City or County councils and the CCA board of directors for ongoing collaboration.

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