Scaling Affordable Housing Energy Upgrades: Lessons from Three Years of Technical Assistance to Local Governments and Community Partners

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ABSTRACT

The challenges of directing substantial energy efficiency investments into underserved communities through programs are well documented. Technical assistance (TA) is a common approach across the nonprofit, private, and utility sectors to support the efforts of building energy upgrade program administrators. Access to TA can make or break energy upgrade programs' ability to make meaningful advances in improving the affordability, comfort, and quality of affordable housing. In this paper, we share successes and lessons learned from our TA program's three-plus years of experience providing in-depth TA to scores of local governments working in partnership with community partners to design and/or expand energy upgrade programs for all types of affordable housing. Our TA team is a collaboration of multiple organizations with decades of expertise in financing, energy efficiency, program design, affordable housing, workforce development, economic inclusion, policy, and community engagement to provide holistic support to communities.

We outline the key takeaways that have emerged through our role as TA providers in terms of designing and delivering effective, impactful TA for localities with unique contexts, challenges, and resources. These key takeaways include the innovative solutions we've seen from communities around the country working to scale their local energy upgrade activities and how our TA helped bring those solutions to fruition. This paper covers these innovations in upgrade program design and TA delivery to help share more widely what we have learned with other TA providers, program implementers, community-based organizations, and local governments.

Introduction

As local and state governments race to achieve their 2030 and 2050 emissions reductions goals, one sector in particular continues to lag in making the necessary progress toward achieving those goals: affordable housing. Buildings account for about one-third of the United States's carbon footprint (Samarripas et al 2024), and residential buildings account for one-fifth of total energy use (US Department of Energy). The nation's 100 million single-family homes and 5.2 million multifamily buildings (Potter 2020) contribute 20% and 28% respectively to the country's embodied carbon level, and large multifamily buildings constitute the single most carbon-intense building typology overall (Hu 2023).

Improving the energy efficiency of residential buildings is especially important due to steadily increasing housing cost burdens faced by households across the country and widespread economic hardships. In 2024, 43.5 million households were cost burdened, meaning they dedicated more than 30% of their monthly income to housing costs, including utilities (Whitney 2026). This included half of all renters–22.6 million people–in 2023 (Joint Center for Housing Studies of Harvard University 2025). Drilling down farther, a quarter of all low-income

households in 2024 faced energy burdens[1] above 15%, and a quarter of low-income homeowners endured energy burdens over 17% (Ayala and Dewey 2024). In the face of extreme housing and energy cost burdens and shortages of affordable housing, energy efficiency upgrades have the potential to stabilize the existing affordable housing supply and increase overall affordability. However, energy upgrade progress lags dramatically: each year, only about 0.2% of low-income households in the United States receive weatherization services through the federal Weatherization Assistance Program, the largest income-qualified weatherization program available in the nation (National Association for State Community Services Programs 2020).

In recognition of these intersectional challenges, the American Council for an Energy-Efficient Economy (ACEEE) in 2022 launched a new technical assistance (TA) program focused on promoting the acceleration of energy upgrade activities in the affordable housing sector. The initial format was to leverage a national, federally funded competition to fuel the implementation and expansion of affordable housing upgrade programs across the country, supported by wrap-around, deep TA. The program would evolve to offer independent, philanthropically funded TA separate from the national competition to broaden the reach of its TA and the nimbleness of TA activities.

Recognizing that the scope of wrap-around, deep TA encompassed expertise beyond ACEEE's scope, ACEEE engaged four partner organizations to launch what became the Residential Retrofits for Energy Equity, or R2E2, initiative.

About R2E2

R2E2 was launched in the spring of 2022 as a partnership of ACEEE, Elevate, Emerald Cities Collaborative (ECC), and HR&A Advisors (see the press release announcement here). The People's Climate Innovation Center (PCIC) advised R2E2 on centering equity in the project and its outcomes and facilitating community-driven planning processes. The R2E2 partner organizations bring together decades of expertise in energy efficiency policy, energy upgrade financing models, economic inclusion and workforce development, program design and implementation, navigating the complexities of the affordable housing sector, and engaging with community-based organizations (CBOs) to ensure policy and program plans reflect community needs.

R2E2's approach to TA for building energy upgrade program design includes embedding racial equity in decarbonization initiatives, pursuing project benefits that go beyond greenhouse gas reductions, focusing on affordable housing (both subsidized and non-subsidized), and directing resources to CBOs and frontline communities. In our capacity-building efforts, we encourage our TA recipients to distribute resources equitably; prioritize authentic engagement with underserved communities; bolster community priorities and leaders; tailor programs to meet the needs of low-income homeowners, renters, and rental property owners; maximize the benefits and minimize the potential harms of upgrades; and target programs to those who have historically been excluded by past policies and programs, such as Black, Indigenous, and People of Color (BIPOC) communities, renters, and other marginalized groups.

[1] Energy burden is the share of monthly household income spent on energy bills. Energy burdens above 6% are considered high, and those above 10% are considered severe.

Summary of R2E2 TA Activities, 2023-2026

R2E2's inaugural TA activity was a two-day virtual summit hosted in January 2023. The summit—attended by more than 1,000 people—featured interactive, in-depth sessions on leveraging federal funding, community-driven planning, and the multiple benefits that residential energy upgrades can bring to communities. These sessions aimed to respond to the time-sensitive need to prepare local government staff and CBOs to access new federal energy efficiency and electrification funding opportunities through the Inflation Reduction Act and Bipartisan Infrastructure Law.

For the remainder of 2023, the focus of R2E2's work was partnering with the U.S. Department of Energy (DOE) to design and launch a national building energy upgrade competition. A core component of R2E2's initial TA for the national competition was application support for 50 under-resourced applicant teams. Applicants who intended to focus on upgrades for affordable housing and who had never previously won a DOE grant were eligible for a $5,000 award and 10 hours of TA from R2E2 to receive feedback on how well their program elements aligned with the competition requirements and how to build a stronger, more comprehensive program model. Nearly all of the 50 teams that R2E2 served with application support TA submitted applications to the competition, and 18 were ultimately selected as winners out of the cohort of 45.

In 2024–2025, R2E2 worked with the 45 winners of the national competition. During that time, R2E2 completed 78 distinct TA projects for 37 different communities (totaling more than 1,500 hours of direct TA) as well as group TA activities such as webinars, office hours, resource development, and peer exchanges on topics including affordable housing program design, community engagement and community benefits planning, funding and financing strategies, workforce development and economic inclusion, and consumer and renter protections.

In 2025–2026, supported by philanthropic funding, R2E2 launched a small cohort of four communities. The cohort included two large jurisdictions (populations of 675,000 and more than 2 million) and two small cities (populations of 64,000 and 110,000).

Across all of these TA recipients, the "teams" were made up of collaborations between local government agencies and CBOs and/or local nonprofits working on all types of affordable housing, including public housing, subsidized affordable housing, and unsubsidized affordable housing (also known as naturally occurring affordable housing, or NOAH). All teams prioritized serving low- and-moderate-income (LMI) households, and many focused on serving historically disinvested, energy burdened, and/or majority BIPOC neighborhoods. The target building typologies for the teams' upgrade programs included large multifamily apartment buildings, small multifamily buildings (including rowhomes and duplexes), condominiums, single-family homes, and manufactured homes. The map in Figure 1 shows the geographic distribution of the communities that R2E2 supported with TA through the national competition and our 2025–2026 cohort. Each house icon represents a TA recipient community.

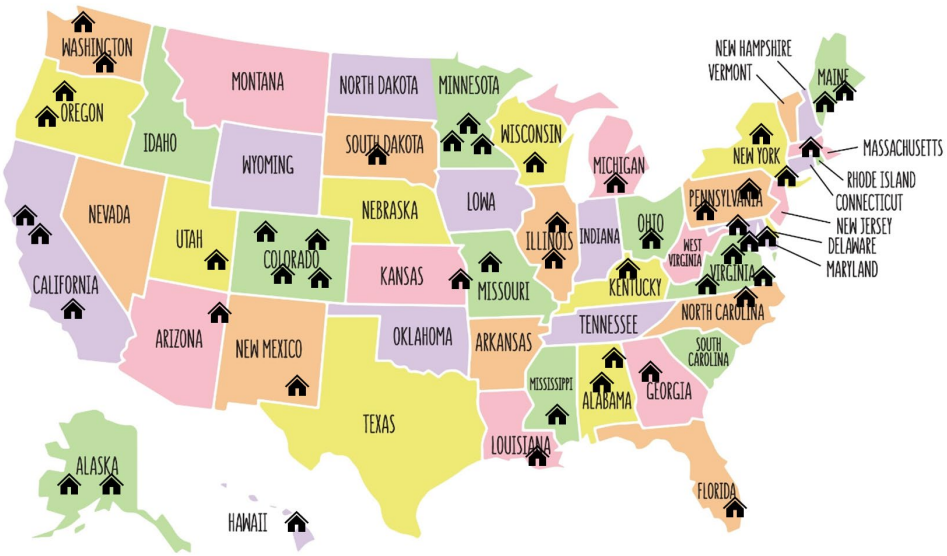

Figure 1: Map showing the geographic distribution of R2E2 TA recipients, 2023–2026.

Key Takeaways & Lessons Learned: Designing & delivering effective, impactful TA for affordable housing upgrade programs

In this section, we cover the key recommendations that have emerged from our partnership's three years of TA engagement with diverse communities across the country. These lessons learned relate to designing and delivering effective, impactful TA for localities with unique contexts, challenges, and resources and are geared toward other TA providers working to support communities in scaling up their affordable housing upgrade activities.

Build Strong TA Partnerships

Building effective TA partnerships requires intentional time and effort, especially when collaborations are formed among organizations that have not previously worked together. Investing early in relationship development among TA providers pays significant dividends in the overall quality, coherence, and impact of the support delivered to recipients. Establishing trust, clarifying roles, and agreeing on shared principles for collaboration create a solid foundation that makes it easier to navigate differing perspectives and working styles. All TA providers must be willing to raise challenges candidly, listen to one another's concerns, and co-develop solutions that prioritize the needs of the TA recipient. At the same time, partners should remain mindful of how best to use each organization's time, expertise, and resources efficiently.

Build in Flexibility

Both the national competition and the independent cohort involved a spectrum of TA recipients, from cities and organizations experienced in designing and delivering programs to those who were designing their first building energy upgrade initiative. Therefore, it was important to take that aspect into consideration when engaging with the TA recipients and developing the process for scoping and delivering the TA.

Budget. Careful attention to our TA budgets for each community—whether defined by hours of TA or available funding—was essential to our TA activities. Each request for support needed to be assessed thoughtfully to ensure that both the breadth and depth of assistance were sufficient to meet the recipient's needs without exceeding the available TA budget and capacity.

This proved particularly challenging for the national competition, as no single TA provider had a complete view of the full scope of a recipient's needs, which were served by multiple TA providers. To address this uncertainty, R2E2 adopted a phased approach to deliverables for the national competition. Each phase focused on a progressively deeper exploration of a given topic, giving teams greater visibility into how many TA hours they were using and enabling them to make informed decisions about whether to continue, shift topics, or request assistance in other areas from other TA providers.

For the 2025 cohort, the budgeting process took a different form. Potential deliverables were identified collaboratively through conversations with cohort members, after which budgets were developed for each option. Working together, the R2E2 partners and each cohort member then prioritized and refined the list of deliverables to ensure that finite resources were directed toward the most impactful and achievable outcomes.

Timeline. Any organization that has delivered TA knows that timelines can shift unexpectedly for a wide range of reasons. Being attentive to potential accelerations or delays allows TA providers to adapt resources proactively, reducing the risk of bottlenecks or periods of inactivity. One early lesson from the national competition was the need to recalibrate expectations around how quickly teams would approve and move forward with a proposed scope of work. While we initially assumed that teams requesting support would be ready to act immediately once a scope was drafted, this proved unrealistic.

Regular progress reporting also emerged as a critical practice. Frequent check-ins helped communicate when additional time was needed due to factors outside the TA provider's control and ensured that all parties maintained a shared understanding of risks, dependencies, and adjusted expectations. Together, these refinements created a more transparent, predictable, and resilient timeline management approach.

Capacity. Managing both the TA provider's capacity to produce deliverables and the recipient's capacity to engage meaningfully in the process can be challenging. R2E2's multi-organizational structure—with multiple staff from each partner and overlapping areas of expertise—helped reduce strain on the provider side by allowing work to be distributed flexibly and efficiently. However, for both the national competition and the 2025 cohort, the recipients' limited capacity frequently posed obstacles. These constraints often resulted in delays in providing necessary information, reviewing drafts, or participating in meetings, which in turn created bottlenecks that reverberated back to the R2E2 team.

To mitigate these challenges, R2E2 incorporated clear expectations for the information, time, and engagement required from recipients at each stage of a deliverable. Milestones were built into timelines to signal when recipient input or decisions would be needed, giving teams a better sense of the effort required and allowing them to plan accordingly. While this early transparency improved alignment, it could not fully eliminate capacity constraints or the ripple effects of delays. Ultimately, the most effective strategy for managing capacity across multiple organizations and recipients proved to be maintaining open, consistent, candid communication.

Expertise. As noted above, the depth and breadth of expertise across the R2E2 partners—and within the individual partner organizations themselves—significantly strengthened the collective ability to provide high-quality assistance across a wide range of

technical and programmatic topics. This diversity not only expanded the overall capacity of the TA team but also created a rich environment for cross-organizational learning.

One especially effective practice for deepening and broadening expertise was the intentional sharing of resources, templates, processes, and sample deliverables among all partners. By circulating materials that were originally developed within a single organization, R2E2 ensured that every partner had exposure to topics or methods that might otherwise have remained siloed. This approach helped create a more uniformly knowledgeable team, enabled smoother collaboration across different areas of work, and built a stronger, more versatile TA ecosystem overall.

Maintain Equity at the Core of TA

As noted above, a core tenet of R2E2's mission is ensuring that affordable housing upgrade programs are grounded in equity. Through multiple channels of our TA work to date, R2E2 has emphasized the following principles for equitable energy efficiency upgrades:

- Engage CBOs not only to promote initiatives, but to incorporate their perspectives into program design, leadership, decision making, and implementation.
- Pursue funding and financing mechanisms that cover as much of the upfront cost as possible, minimizing financial burden on homeowners and business owners.
- Deliver upgrades across a broad range of affordable housing types—not solely single-family, owner-occupied homes.
- Support home and property owners through the often-complex processes of gathering required documentation for eligibility, coordinating contractors, and managing rebate and incentive paperwork, facilitated through a one-stop-shop program design.
- Anticipate and mitigate the potential negative impacts of upgrades, including renter displacement, gentrification, and increases in energy or rental costs.

Some TA recipients were already familiar with many of these principles but required guidance on how to operationalize them. Others were newer to the concepts and needed deeper support and exploration to integrate them effectively into their program designs.

Balance Thoroughness with Effectiveness

At its core, R2E2 is a mission-driven coalition committed to achieving real, measurable impacts in affordable housing and sustainability. Delivering TA within tight budgets—whether measured in hours or dollars—requires carefully balancing the depth needed to produce meaningful outcomes with the efficient use of limited resources. This challenge was especially evident during the scoping phase for the 2025 cohort, which lacked the structured framework provided by the national competition that helped narrow and focus teams' TA requests.

Reaching an initial understanding of each cohort member's needs, goals, and priorities, followed by an exploration of a wide range of potential TA topics and deliverables, required substantial time and effort. To create a structure that would allow R2E2 to manage multiple TA engagements simultaneously, partners were assigned defined roles in advance, such as project manager, client manager, subject-matter expert, and quality assurance lead. This role clarity helped ensure that the various components of each engagement were addressed, and

regular communication and formalized data storage and tracking systems kept the full team aligned on status and outstanding issues.

While this structure improved coordination, the R2E2 team still faced challenges in scoping TA for recipients funded through smaller philanthropic budgets. Unlike the national competition, these engagements did not have predefined limitations on TA topics or methods. As a result, the extensive exploration of alternatives and the decision making required to narrow the scope consumed a significant share of available resources, leaving less funds for delivering the TA needed to achieve desired outcomes. A more streamlined scoping schedule and process would have allowed a greater share of resources to be directed toward producing impactful TA deliverables.

Pitch TA Ideas Proactively

As noted above, the national competition teams reflected a wide range of experience with program design—both broadly and within specific topic areas such as equitable distribution of benefits. At the start of the competition, R2E2 adopted a relatively passive approach to providing TA, focusing on informing the teams of the TA we could offer and waiting for them to come to us with requests. However, it soon became clear that many teams didn't know what they didn't know. In response, R2E2 shifted to a more proactive engagement strategy, helping teams explore potential areas of TA that met them where they were and supported their progress toward meeting competition requirements and developing strong program designs.

One of the most effective proactive tools was a quarterly check-in call, which was offered to teams without counting against their TA hourly budgets. These sessions allowed the R2E2 team to better understand each team's knowledge and expertise across various topics and to suggest potential TA deliverables. Frequently, these conversations led teams to request assistance on issues identified during the check-ins.

Over time, R2E2 expanded its proactive engagement tactics even further, connecting with teams outside the standard TA request process and the quarterly check-ins to ensure they received timely guidance and support.

Offer Broad TA

While the term *technical assistance* literally means providing support on the technical areas of energy upgrade program design (e.g., right-sizing heat pump systems, performing post-installation QA/QC), our recommendation to other TA providers working to support communities' upgrade programs is to offer broad TA on additional topics that are foundational to strong upgrade program design, including non-technical topics.

This need for broad TA was amplified by the 45 awardees of the national competition that R2E2 supported. Those teams identified the following as the key non-technical barriers they faced to scaling energy upgrades:

- Insufficient or insufficiently skilled workforce.
- High upfront costs, financial obstacles for low-income families, and difficulty accessing funding sources.
- Lack of streamlined services.
- Health and safety issues and deferred maintenance.

- Difficulty connecting with and encouraging participation from rental property owners.

In the awardees' applications to the national competition, the following were the most commonly stated TA needs: funding braiding; workforce development; building technologies; regulatory and policy guidance; supply chain issues; and community education and outreach about energy efficiency program offerings.

This variety of challenges and TA needs illustrates the wide-ranging nature of thoughtful building energy upgrade program planning and the need for wraparound TA that addresses challenges beyond building technologies and the technical specifications for equipment installations. The national competition recognized these needs and onboarded a team of seven TA providers offering a range of expert support, shown in Figure 2 below.

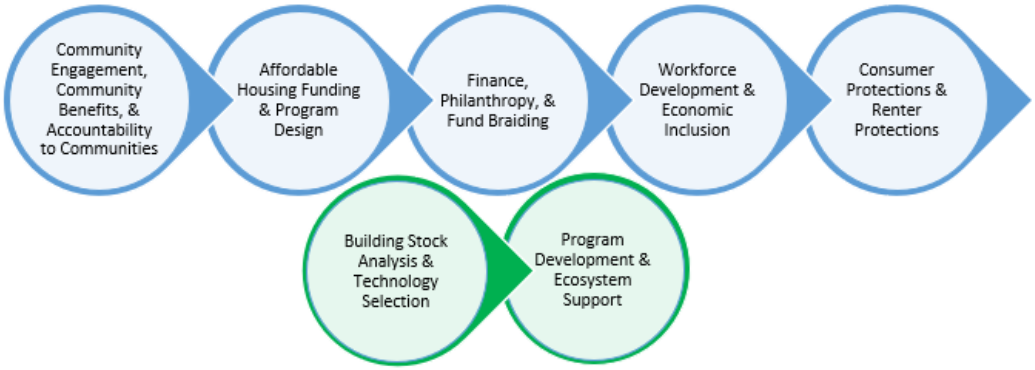

Figure 2: Technical assistance topic areas that were made available to the awardees of the national building upgrade competition that R2E2 assisted. R2E2's TA offerings are shown in blue.

Some of R2E2's most common requests for TA through the national competition were related to community and stakeholder engagement (e.g., partner landscape scans, partnering arrangements between local governments and CBOs, outreach to rental owners); funding and financing (e.g., funding scans, building upgrade project capital stacks, strategies for reducing upfront costs for program participants); consumer protections and risk mitigation (e.g., identifying and planning to mitigate potential negative impacts to residents); affordable housing program design (in particular, streamlining program design from a participant experience perspective); and workforce development (e.g., identifying skilled contractors, exploring locally available contractor training and upskilling opportunities). Examples of the types of deliverables we produced in response to these TA requests include:

- Analysis of strategies to prevent displacement and protect against rent increases.
- Educational materials on climate justice, energy equity, and home energy efficiency.
- Best practices guidance documentation for community advisory boards.
- Feedback on programmatic outreach and intake materials, focused on accessibility and equity considerations.
- Assistance developing partnership agreements, budgets, decision-making models, and conflict resolution processes for working with community members and community partners.

- Materials, language, and talking points to share with rental property owners outlining the financial benefits, expected payback periods, success stories, and the "why" behind rental property upgrades.
- Program design recommendations for unsubsidized rental housing to address typical rental property owner barriers and maximize benefits to renters.
- Guidance on economic inclusion strategies and inclusive language to incorporate into contractor requests for proposals (RFPs).
- Mapping income eligibility to Census tracts in a specific region for targeted outreach.
- Funding scan toolkit and sample funder pitch deck.

In R2E2's 2025 cohort, the four communities that we partnered with also sought support related to funding and financing, policy recommendations, workforce development, community partnering opportunities, community outreach and engagement, and program design. The far-ranging nature of the TA requests that we have received over the past three years indicates the need for and usefulness of TA offerings that take a broad, holistic approach to TA as it relates to upgrade program design and implementation.

Offer TA in a Variety of Formats

In addition to offering TA on a wide variety of topics, we have found that it's also helpful to offer a variety of formats of TA and TA deliverables. TA that is scoped directly for a particular recipient can take the form of written deliverables, coaching sessions, facilitated workshops or work sessions, or the review of existing materials. When TA providers are working with multiple communities simultaneously, offering various forms of group TA is an effective use of TA providers' time and capacity that also creates space for TA recipients to build relationships with, learn from, and share resources with peer communities. Group TA can take the form of webinars or trainings, peer learning exchanges, office hours, affinity groups, or written deliverables that are higher level and applicable across multiple local contexts. In our experience, building upgrade program administrators and their partners are hungry for real-world examples of what others are doing in the affordable housing upgrade space, and they always appreciate and value the opportunity to gather and learn with and from peers on topics of shared interest.

We have also found that many TA recipients, particularly those with less building energy upgrade program administration experience, benefit from opportunities for informal or unstructured TA and thought partnership with TA providers in addition to peers. For example, we used the quarterly check-ins described above to brainstorm next steps and solutions to challenges, and to work toward identifying concrete TA needs and opportunities for TA support. In our work with less-experienced TA recipients, these regular check-ins were a crucial opportunity for us to help guide them toward TA requests that could be the greatest value-add to their work at different key intervention points.

Innovative Solutions for Scaling Local Upgrade Activities: Examples from communities we supported

In this section, we share some of the innovative solutions we've seen from communities around the country working to scale their local affordable housing upgrade activities and

describe how our TA helped support those communities in making progress on their initiatives. While we describe some of the post-TA outcomes from our work supporting these communities, many of the desired outcomes for which our TA laid the foundations will be the product of longer-term workstreams, and it is too early to paint a complete picture of the impacts from R2E2 TA.

Case Study 1: Green & Healthy Homes Initiative – Community leadership in home upgrade program planning

The Green & Healthy Homes Initiative (GHHI) is a well-established, Baltimore-based nonprofit with a mission to protect public health and advance housing stability in economically challenged communities. Its service model integrates lead hazard control, healthy homes interventions, weatherization, and energy efficiency work in recognition of the critical intersections of energy efficiency, indoor air quality, and health for low-income households (Green & Healthy Homes Initiative 2026). This model includes braiding funds from private and public sources to facilitate the delivery of coordinated services to GHHI's client base.

In anticipation of the deployment of extensive funding for home energy efficiency and electrification upgrades that were to be made available through the Inflation Reduction Act and Bipartisan Infrastructure Law, GHHI began planning to scale its efforts to support access to electrification and renewable energy technologies in under-resourced communities. In keeping with its values of community-led work, GHHI conceived a plan to implement a new Electrification Community Advisory Board (ECAB) to help strengthen its work on home energy efficiency and electrification upgrades. In 2024, GHHI sought R2E2 TA to support the scoping and launch of the ECAB. The goals of the ECAB were to gather broad perspectives on electrification and create a pipeline of potential electrification project recipients through an ambassador-style model.

To support the ECAB, R2E2 provided the following TA deliverables:

- A best practices guidance document for community advisory boards, covering topics such as membership; decision-making models; setting a scope, shared goals, and clear roles; creating community agreements; and navigating conflict.
    - This deliverable was later adapted into a guide on best practices for local governance boards and is available on R2E2's website.
- A workshop with GHHI staff to practice working through some of the collaboration and conflict resolution tools and methods covered in the best practices document.
- An additional two-part workshop for GHHI staff and partners on popular education and facilitative leadership practices to equip them with strategies to enable a deeper level of community collaboration and leadership for ECAB participants.
- A draft outline of an agenda and topics to be covered at the ECAB launch meeting.
- A map of the onboarding process for ECAB members, with proposed sequencing and high-level agenda items for the first three months of regular ECAB meetings.
- A more in-depth guidance document on strategies to address conflict and instances of harm requiring accountability that may arise in a board setting.
- A facilitated strategy session to support GHHI in applying its lessons and experiences from the ECAB to future community engagement efforts and related GHHI programming and services.

The ECAB had a successful launch and created high-functioning group norms and strategies for its collective work (see Figure 3) that helped it to weather federal funding uncertainty and the resulting changes in GHHI's planned electrification campaign. After GHHI lost access to the federal funding that supported the ECAB launch, GHHI has maintained and advanced the board independently, and the board continues to advise GHHI on work related to energy affordability and energy sovereignty.

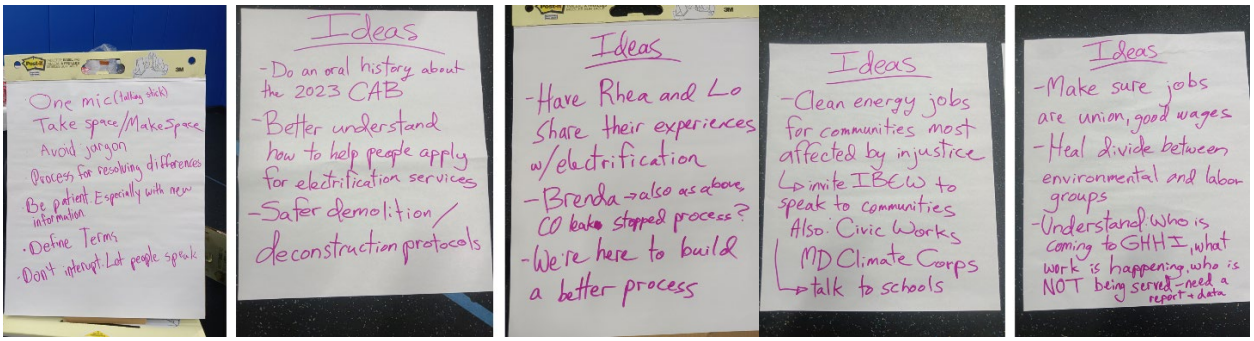

Figure 3: Notes from the launch of GHHI's Electrification Community Advisory Board. Photo credit: GHHI

This TA engagement illustrates the strengths of providing TA on topics beyond the technical elements of upgrade programs and in a variety of formats to be responsive to TA recipients' needs and priorities. It also demonstrates the flexibility required in the scoping process to continue to deliver effective TA despite unexpected circumstances, such as the significant loss of federal funding that temporarily affected the board.

Case Study 2: City of Las Cruces, NM – Program design responsiveness to community priorities

The City of Las Cruces, New Mexico (population 117,000), partnered in 2023 with a local CBO, Doña Ana Communities United (DACU), to form a working group of 25+ diverse community stakeholders to identify and prioritize challenges with the city's housing stock. The working group, dubbed Plugged In For Good (PIFG), met monthly for more than a year to analyze building and energy use data, discuss what an equity-focused energy efficiency pilot program could look like, and identify systemic housing and energy barriers that low-income residents face. The PIFG working group hosted multiple community events to engage community members on topics related to efficiency, affordability, health, and comfort, starting in 2024 with a community dinner at a local school that was attended by 50 people.

Figure 4: A PIFG work group member at a community engagement event. Photo credit: Kelsey Hiss, Doña Ana Communities United

Table 1 outlines some key themes that emerged during these touchpoints with the community and how the city and PIFG team responded to these community priorities in the design of the PIFG home upgrade program.

Table 1. Program design responsiveness to community priorities

Community priority/concern	How PIFG's program design addressed the concern
Health impacts from poor indoor air quality	The PIFG team formed a partnership with a university air quality research team to administer free indoor air quality testing for PIFG participants. They also emphasize ventilation as a suggested measure as part of the program's upgrade package.
High cost of home upgrades and undesirability of taking on loan debt to address upgrades	PIFG committed to covering 100% of the costs of eligible weatherization, health, and electrification measures for pilot participants, leveraging New Mexico's HEAR program to cover half the costs.
Mistrust of contractors: miscommunications about scopes of work due to language barriers; having no recourse for poor installations	PIFG staffed Energy Navigator positions to act as contractor liaisons and is working to create an in-house contractor network that will include QA/QC.

R2E2 supported the PIFG program team with the following TA:

- Quarterly informal brainstorming sessions, where we talked through topics such as aligning program outreach with community priorities; educating PIFG participants about available state rebates; continually seeking community feedback and input after program launch; building community trust in the program; empowering community members with DIY skills; seeking funding to address health measures; and more.
- Multiple work sessions to assist the PIFG team with refining the customer journey process, with an emphasis on providing multiple avenues for consumer protection.

- Reviewing and providing feedback for participant-facing program materials, such as program application and intake forms.
- Providing examples of forms and language from other programs related to eligibility, rebate access, contractor agreements, and liability waivers.
- Providing examples of customer-facing program outreach materials from other programs, including brochures and flyers that outline the customer journey, building upgrade measures, and financing options.

PIFG's pilot program successfully recruited nearly 70 homes and launched in the spring of 2026. The program staff have received consistent feedback from participants about how easy the application and onboarding processes are, which staff attributes to the extensive work they did with R2E2 to workshop the customer journey process to be as smooth and effortless as possible for program applicants, and to having many solid examples of intake and eligibility forms from other programs to build from. Program staff will be gathering feedback from pilot participants at a variety of touchpoints and are planning a pause-and-consider evaluation exercise after the first 14 homes complete their energy upgrades to assess where improvements can be made to program delivery based on participant feedback.

This TA engagement illustrates the strengths of providing TA on a variety of topics, providing TA in a variety of formats (including informal TA, such as the quarterly brainstorming sessions), and being flexible as pivots emerged in the PIFG team's pilot program planning. To learn more about PIFG, see this R2E2 blog post featuring a Q&A with a PIFG Energy Navigator and one of the program's core CBO partners.

Case Study 3: Climate + Energy Project – Strategic diversification of the fundraising model for organizational and programmatic longevity

The Climate + Energy Project (CEP) is a Kansas-based nonprofit with a mission to build resilience in Kansas through equitable clean energy solutions and climate action. Founded in 2007, CEP has traditionally played a connector and convener role, bringing together a wide array of stakeholders in the housing, health, tenants' rights, and climate/environment spaces to facilitate critical thinking around developing equitable and productive solutions to Kansans' pressing issues (Climate + Energy Project 2026). CEP engages in community education, community organizing, and policy advocacy related to reducing emissions and improving residents' quality of life.

After the catastrophic loss of federal funding in 2025 that upended CEP's funding model, R2E2 worked with CEP to develop a funding strategy that both met its immediate needs and built financing resilience over the long term. Early in our engagement, it became clear that the team needed TA that focused less on identifying specific existing funding opportunities and more on strategic support for developing a fundraising business model that reflected the organization's evolution, its body of work, and the shifting funding ecosystem.

Over the course of three work sessions, the R2E2 team worked with CEP to build out a fundraising strategy that defined both where the organization had been and how it was adjusting to meet its community's needs (e.g., combining environmental work with pro-democracy work, building coalitions with organizations instead of being all things for all people). We helped the organization think through foundational questions like "what is our product?" and "how are we quantifying our impact?" while framing all shifts as opportunities to attract funding for the organization.

This case study illustrates the shift many organizations have needed to make in response to changes in the federal funding landscape, and the ripple effects across the broader sustainability funding ecosystem as well as the value that TA providers with strong strategic planning, fundraising expertise, and a capacity for nimbleness in TA can offer.

Case Study 4: Red Feather Development Group – Growing a local workforce to meet community-specific needs

Red Feather Development Group is a nonprofit serving residents of the Hopi and Navajo Nations in the Four Corners region with home health, energy, and safety improvements, education and outreach, and other core services such as procuring and delivering firewood to mobility-restricted Elders reliant on woodstove heating in the winter. Red Feather has collaborated with the Navajo and Hopi Tribal governments as well as the states of Arizona and New Mexico to deliver housing repair and weatherization services to Tribal members. Red Feather's home repair, weatherization, and electrification service delivery faces additional challenges on top of the usual barriers that low-income building energy upgrade program administrators face, including:

- **Lack of infrastructure:** About 13,000 Diné (Navajo) households on the reservation lack access to electricity (Ziv et al 2024), meaning that upgrading a home from a woodstove to a heat pump—or any other type of HVAC equipment—necessitates the installation of on-site solar as well.
- **Extensive home repair needs**: 40% of Tribal members living on Native American reservations do not meet the federal standard for adequate housing, resulting in extensive home repair needs before weatherization or electrification can take place (Red Feather Development Group 2026).
- **Extremely rural areas**: The Navajo Nation is the largest land area retained by a Native American Tribe, covering an area of over 27,000 square miles spanning Utah, Arizona, and New Mexico. The average population of a Navajo Chapter is about 1,500, with small population centers surrounded by vast, sparsely populated areas (Navajo Nation Wind, ND). The nearest urban areas where contractors are concentrated are Farmington, New Mexico, and Flagstaff, Arizona, where Red Feather is headquartered. From Flagstaff, it is more than a four-hour drive to reach the far side of the Navajo reservation. This extreme rurality and the large geographic expanse disincentivize contractors from traveling to the reservation to serve Tribal members with home upgrades.
- **Language needs**: Many Tribal Elders lack English proficiency, and many non-Tribal contractors lack Diné language proficiency. This has led to Red Feather bringing on bilingual in-house contractors and engaging in workforce development activities to support the growth of the Diné contractor base.

R2E2 worked with Red Feather on the workforce development components of its work. Initial scoping discussions with the Red Feather team focused on aggregating rural workforce development case studies and identifying existing workforce development training opportunities in the region. However, research yielded minimal findings on training strategies or regional opportunities relevant to its initiative. Given the lack of local training options, the team

needed to explore alternate education pathways for workers and contractors in the project's geographic areas.

Because education is a key component of licensure and certification, R2E2 shifted its research focus to identifying resources for licensing and apprenticeship programs in the relevant trades across New Mexico and Arizona, as well as national certifications that could be pursued. Red Feather could then partner with existing construction firms and workforce organizations to leverage these resources, enabling workers and contractors to obtain licenses and certifications that would provide at least a foundational understanding of the skills required for the work, even if not the specific measures and technologies involved.

This example illustrates how a home upgrade program can be designed around community- and location-specific challenges, such as amplifying workforce development efforts to respond to the contractor scarcity created by the extreme rurality and language barriers characterizing households on the Navajo and Hopi Reservations. The Red Feather case study underscores the need for TA providers to think creatively and identify alternate pathways that can help organizations achieve their desired results.

Conclusion

Even for knowledgeable and experienced organizations like the members of the R2E2 coalition, providing technical assistance can present a range of challenges that—if not addressed through careful planning, coordination, and flexibility—can undermine even the most well-intentioned efforts. While sharing knowledge may appear straightforward, it requires a deep understanding of the needs, capacity, dynamics, and unique characteristics of not only the TA recipients but also the TA providers themselves. This understanding is essential for developing a foundation and framework that leverage the strengths of both parties while filling gaps and overcoming obstacles within and beyond their control.

Once this foundational understanding is established, the next determinant of success is the level of cohesion among TA providers, whether they are individuals within a single organization or distributed across multiple organizations. Building on this foundation requires establishing trust and shared goals, supported by clearly defined roles and responsibilities, effective communication, and well-structured procedures and processes. While these elements create a strong base, it is equally important to maintain flexibility to address the unique circumstances of each recipient and adapt to unforeseen challenges that may arise.

The shifting funding landscape and evolving policy priorities in recent times have made it increasingly challenging for organizations to address affordability, equity, climate, and energy issues in their communities. These pressures make high-quality, expert TA more important than ever. Supporting communities in their energy efficiency initiatives and delivering support that produces meaningful, lasting results can be deeply rewarding for TA providers, which has been R2E2's experience over the last three years.

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