

Reaching the Unreachable Retrofits

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ABSTRACT

Over the past decades, energy efficiency programs have reached millions of U.S. homes and businesses, delivering improvements in lighting, HVAC, appliances, and more. Yet, these efforts have mostly focused on relatively accessible market sectors leaving many remote or underserved communities...well, underserved.

So how do we bring energy efficiency to the out-of-the-way places, the interstitial spaces, and the overlooked corners of our built environment? Technologies that are now standard practice in urban and suburban communities—like speed-controlled pumps and LED lighting—have often bypassed rural communities which are often a decade or two behind the current state-of-the-shelf.

This paper shares energy efficiency “adventures” from rural eastern California, including work with remote communities and Native American tribes. Projects range from casinos, bus barns, and airport beacons to swimming pools, ice rinks, senior centers, and workforce housing. Backed by California’s Regional Energy Networks (RENs), these efforts succeed by building trust, persistently showing up, and taking a flexible approach to applying energy-saving programs.

Outreach in rural communities goes beyond digital campaigns—it’s tabling at Fourth of July parades, chatting on ski lifts, attending tribal gatherings, or chatting in hot springs. Public agency staff and community leaders become project champions, working closely with energy engineers who lead through listening and partnership.

This paper explores how energy efficiency and resilience planning driven by community engagement, technical expertise, flexible financing, and innovative incentive design gets done. It’s a story of collaboration, advocacy, and grit, and it expanding the reach of energy efficiency to those who need it most.

Introduction: Why is Rural Different?

The authors of this paper have worked to bring energy efficiency improvements to a wide variety of building sectors and geographical areas. Most recently, their focus has been on rural and remote areas of eastern California, from chilly mountain towns to sunbaked desert communities. Serving these locales differs from the more populous parts of California, where the climate also happens to be milder, such that it felt worth sharing the experiences and lessons learned.

This is not a scientific or technical paper; it is intended to provide examples of the struggles faced by geographically hard-to-reach communities in realizing the benefits of energy efficiency programs. Such struggles have been substantiated in studies identifying the *rural cost penalty* which refers to the distinctive characteristics of rurality that influence the cost and how rural services are delivered (Shani, Reingewertz, and Vigoda-Gadot 2024). This notion is supported by recent research that concludes that both local governments and K-12 public schools in more rural counties in California have lower total program budgets because of their lower

population compared to more urban counties (Le et al. 2024). The California Public Utilities Commission (CPUC) has focused efforts on advancing equity in California's energy efficiency landscape (Jacobsohn et al. 2024) through the creation of Regional Energy Networks (RENs) described in further detail below. Furthermore, there is a growing interest in the topic of serving rural: Figure 1 shows that a review of sixty peer-reviewed studies on rural energy retrofit practices from 2012–2023 found a steady increase in the number of publications on the topic through the latter part of that period.

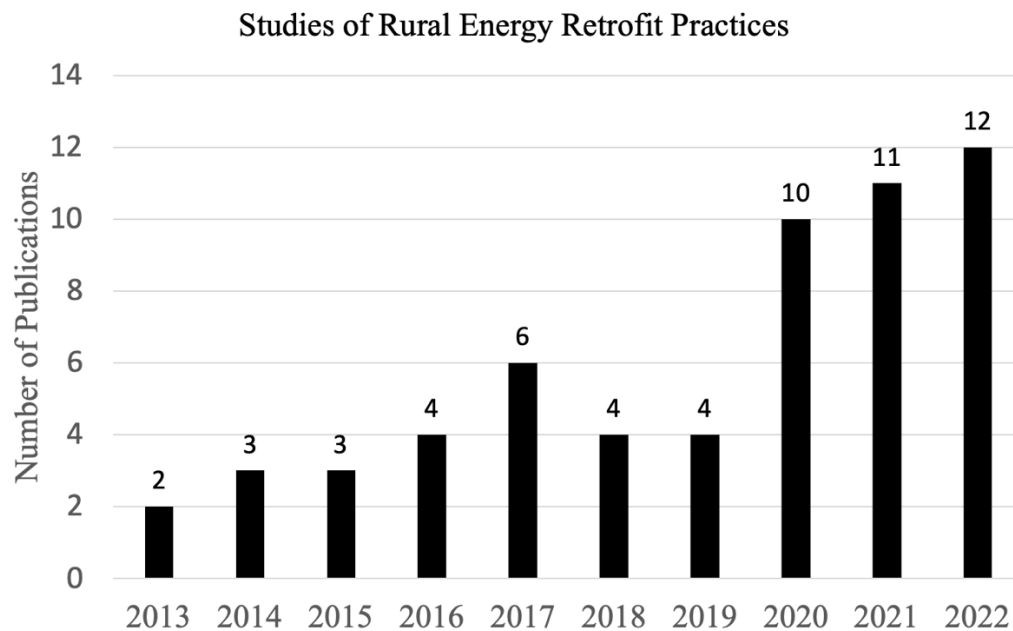


Figure 1. Growth of publications on rural energy retrofit practices from 2012–2023. (Data from 2023 removed due to being a partial year.) *Source:* Abouaiana and Battisti 2023

Figure 2 shows claims data retrieved from the California Energy Data and Reporting Systems (CEDARS) based on the hard-to-reach designation and climate zones. It indicates that California Climate Zones (CZ) 14 and 16, in green and blue respectively, have been largely left out of program offerings available from California Investor-Owned Utility (IOU) programs funded by the ratepayer Public Purpose Program Charge (CEDARS 2026). CZs 14 and 16 geographically cover nearly half of the state and include the remote area that is the subject of this paper. For reference, Figure 3 represents California Energy Commission’s Building Climate Zones.

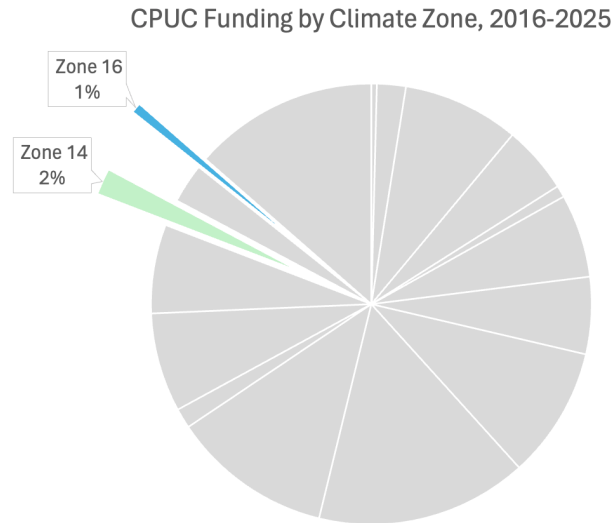


Figure 2. CPUC-authorized funding for California climate zones. Zones 14 and 16 receive a tiny portion of funding despite covering nearly half of the state. *Source:* CEDARS 2026

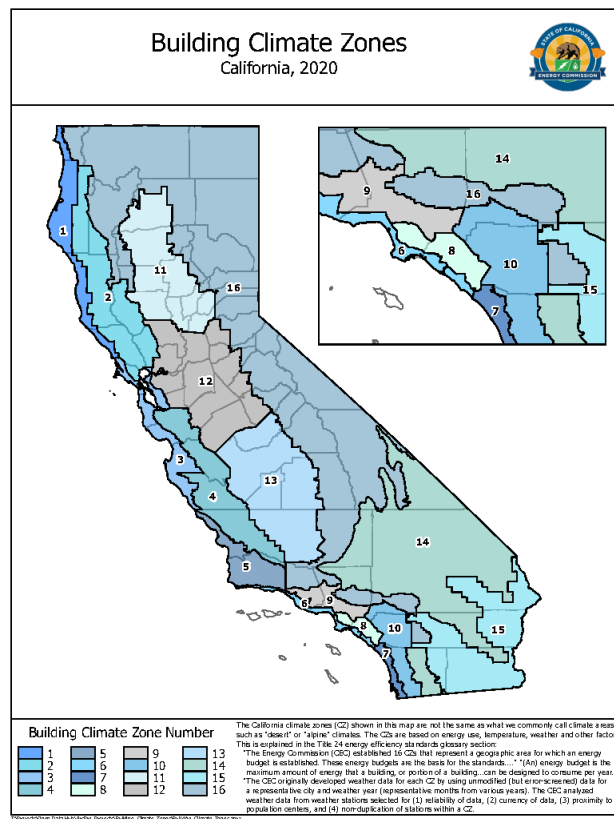


Figure 3. California building climate zones. *Source:* State of California Energy Commission

Tales from the Remote Lands of Eastern California

The High Sierra Energy Foundation (HSEF), a nonprofit organization based in Mammoth Lakes, serves the Counties of Inyo and Mono in a swath of rural California known as the Eastern Sierra (Figure 4). The area strays far from the classic beach-and-palm trees imagery most people conjure when they think of California. It is a land of extremes containing both Mt. Whitney and Badwater Basin, the highest and lowest points in the continental United States, respectively. In 2023, Mammoth Mountain received over 75 feet of snow (NPR 2023), and Mono County's Bodie State Park registered -27 degrees Fahrenheit (LA Times 2023)! The highest officially recorded temperature in the world —134 degrees Fahrenheit —was recorded in Death Valley National Park, which resides within Inyo County (NPS 2016).



Figure 4. California, showing Mono (green) and Inyo (gold) Counties

Custom Ski Chalets to Desert Mobile Homes

Extremes can also be found in the demographics and occupancy of the two counties. While Mammoth Lakes boasts mega mansions in the resort area and private jets for quick travel, Tecopa, a community in the southeastern corner of Inyo County, has a income less than half the rest of the state (US Census Data). Rural, low-income communities like Tecopa face elevated energy affordability burdens where even a mild percentage rate increase can still represent severe affordability stress.

Both areas see seasonal fluctuations in occupancy—decreasing in Mammoth in the winter for snow and in the summer in Tecopa for heat. Residents who live year-round in either place face significant heating and cooling challenges. Second homes may be close to Net Zero, but they could just as likely consume immense amounts of energy even when unoccupied for long stretches of time.

The two counties combined cover 13,222 square miles. There are nearly as many residences in Mono County as there are permanent residents. The full-time population of roughly

32,000 can swells significantly throughout the year due to tourism and the bountiful outdoor recreation that the area is known for. Adding up all these extremes, energy efficiency outreach, education, and project delivery just cannot be delivered in a typical fashion.

Additionally, remote locations are notoriously expensive to serve, with relatively few customers per mile. Rural areas often have no fossil gas infrastructure, as is true for Inyo and Mono Counties where residents rely on costly propane and/or electric resistance technologies for basic heating tasks. Despite the expense, reaching these areas with efficiency and resilience programs can produce outsized positive impacts in several ways.

The End Of The Line

Rural electric circuits are prone to outages, both short- and long-duration, which lead to the demand for expensive capital upgrade projects. Improving energy performance on these circuits can forestall or even eliminate costly circuit and substation upgrades. Targeting properties on these circuits through weatherization upgrades, switching from resistance heating to heat pumps, and installing backup generation and/or storage can reduce connected loads and buy time before rebuilding distribution lines, while bringing benefits to the occupants.

Even if distribution infrastructure isn't an issue, retrofits can improve the quality of life and consistency of energy services for remote utility customers by creating better comfort and lower energy costs. When the power goes out for hours or even days at a time, better-insulated buildings will maintain temperature longer and provide more hours of safety in both cold and heat events in comparison to poorly insulated counterparts (Ayyagari 2020).¹

Utility customers at the “end of the road” have expressed feeling overlooked by energy programs (understandably so), and they also are often the most in need of upgrades. Because the public-benefit charges that fund many efficiency programs are assessed per unit of electric energy consumed, utility customers that use the most also pay the most—and likely need the most by way of efficiency retrofits. It's natural for program implementers to focus first on the low-hanging fruit of denser neighborhoods, whether for pilot projects or full rollout, since the transactional costs are much lower there.

The situation is a bit like bundling retrofits for a building where fast-payback measures (like lighting upgrades) can help pay for longer-payback measures (like window retrofits or HVAC systems).² Remote locations are nearly always going to cost more to implement than close-in locations, both for soft costs like marketing and outreach, and for installation where trucks have to roll further and longer and the local workforce is limited.

For example, funding a large multi-family project with dozens of units can be coordinated by contacting the Property Owner's Association, which could pay through an assessment, from reserve funds, or have the capacity to seek out energy efficiency program funding. To match the energy savings of a major retrofit to the complex's domestic hot water (DHW) or an upgrade to its heating and cooling systems would take much more effort to reach dozens of country road houses and farms—and would cost much more to install.

¹ Rocky Mountain Institute found that “in a simulated power outage during a cold snap, indoor temperatures within homes constructed before 1950 dropped to below 40 degrees Fahrenheit within eight hours; whereas 2009 code-compliant buildings dropped to below 40 degrees after 45 hours” (Ayyagari 2020.) Similar effects occur in hot climates.

² This point recalls an analogy coined by RMI Founder Amory Lovins who compared energy efficiency to eating a lobster: there are some big obvious meaty chunks but also lots of tiny but tasty morsels that are harder to reach.

Energy Efficiency Beyond The City Limits

Technologies that are now considered to be standard practice or “state of the shelf” are often futuristic to remote and rural locations. In most urban public buildings, it can be rare to find magnetically ballasted T12 fluorescent lamps, 17 years after their phase out began. However, they are still in use in the Town of Mammoth Lakes’ road shop facility where the snowplows are serviced. In fact, every agency inventoried by HSEF still has at least some T12 lamps, with most general-area lighting served by better, yet obsolete, T8 fluorescents.

Similarly, so-called “Industry Standard Practices” for processes such as wastewater treatment are not necessarily standard practice in rural communities.³ This designation may seem like semantics, but it affects eligibility for incentive payments per CPUC rules. In California, deemed measures for lighting retrofits no longer qualify for incentives due to the assumption that most lighting is already using efficient LEDs—which may be true in urban areas where program delivery is more expeditious. The transformation takes significantly longer in rural spaces for a variety of potential reasons including distance, access, finances, education, and concern about using leading-edge innovation.

Regional Energy Networks: New to the Rural Frontier

RENs were formed to bring energy efficiency programs to communities, based on experienced local governments and nonprofit organizations and seeded from energy efficiency funding from the American Recovery and Reinvestment Act of 2009. They design and implement programs intended to meet their unique communities’ needs and fill energy efficiency program gaps left by traditional utility programs

The CPUC approved the Southern California Regional Energy Network (SoCalREN) and the Bay Area Regional Energy Network (BayREN) as pilots in 2012, and they received permanent status as authorized Program Administrators in the California energy efficiency landscape in January of 2024. RENs now serve 94% of California’s population and are core to California’s climate goals, focusing on equitable access to clean energy solutions and grid resilience. The rural parts of California that are the subject of this paper have only recently been served by RENs.

City Partners, Local Roots

HSEF partners with SoCalREN and the Central California Rural REN (CCR REN), two of the state’s six RENs. Programs available through the RENs address the needs of the rural region described above by providing broader, less restrictive scopes with a focus on education and relationship-building, reducing the focus on project transactions.

Public agency program delivery funding comes from the SoCalREN, which is overseen by Minh Le, General Manager of Energy and Environmental Services, and led by Lujana Medina, Environmental Initiatives Division Manager at the County of Los Angeles. Medina believes that the greatest long-term potential lies in underserved communities. These areas often have outdated infrastructure where upgrades can yield a higher impact. Investment in these

³ For example, modern wastewater treatment plant digester tanks control air injection blower speed to achieve a target dissolved oxygen level, rather than running flat out at full speed. An example of this technology is described below in this paper.

communities also ripples outward building knowledge, economic opportunity, and community leadership that extend beyond energy savings.

Medina's childhood upbringing informs these insights and makes the work deeply personal. Blending her policy acumen and life experience paves the way for finding creative approaches to address the issues (L. Medina, Environmental Initiatives Divisions Manager, County of Los Angeles, pers. comm., January 30, 2026).

A key innovation in SoCalREN's Public Delivery Program approach is the Regional Partner model. Instead of top-down, impersonal outreach and implementation, local partners with deep community ties serve as boots-on-the-ground advocates. In the case of Inyo and Mono Counties, that means being on a curling team with an elected official, or staff bumping into an agency energy champion on a ski lift or at the hot springs. These real-world connections foster trust building, shared goals, and better outcomes.

Although all sectors in the Eastern Sierra are theoretically eligible for other programs delivered by non-REN entities, they rarely reach the remote region or lack contractors enrolled in the programs to deliver benefits.⁴ SoCalREN's regional partnership with HSEF focuses on public and tribal agencies, such as Inyo County, the Bishop Paiute Tribe, Town of Mammoth Lakes (TOML) and other small community service districts (CSD) and public utility departments in HSEF's zone of influence. Without the Regional Partner model, these rural and remote public agencies would have been left further behind.

Assisting Public Agencies

SoCalREN and HSEF's efforts with public agencies in the Eastern Sierra are both instructive and comprehensive. Combining the REN's resources with local expertise, the HSEF offer service offerings aimed at having meaningful impact (Table 1).

As the local connection, one of the primary services HSEF offers is the Facility Equipment Inventory. This amounts to a tally of energy-consuming equipment with model numbers, quantities, etc. and an assessment for updates and retrofits. Essentially a first-pass energy audit, it includes education for agency staff to consider energy efficiency and consumption in their future equipment planning and daily operations. This process also often exposes facility staff to utility bills, which can be an eye-opening experience.

See Figure 5 for photos of HSEF staff conducting facility equipment inventories (FEI).

⁴ TECH Clean CA had no enrolled contractors or single-family incentives, out of 63,567 projects, in Inyo or Mono counties, according to the TECH Working Data Set_Single-Family spreadsheet available on the program website.

Table 1. Service offerings through SoCalREN and High Sierra Energy Foundation’s partnership

Service Offering	Description
Facility Equipment Inventories/Audits	Site visits to public agency buildings to document all energy-consuming items. Provide agency personnel education on energy efficient options
Utility Data Analysis	Collection and review of utility data, sometimes the first time facilities personnel see this data
Engineering Review and Specifications	Review of current equipment by energy experts coupled with recommendations
Energy Savings Analysis	Modeled savings and optimization guidance from energy experts
Assessment for Incentives and Rebates	Evaluate eligibility for a broad suite of incentives and rebates, often beyond rural agencies’ capacity
Assistance with Funding Resources	Track and share available funding and financing options
Advocacy with Decision Makers	Partner with local agency staff to co-present project at board meetings validating staff’s request
Procurement Assistance	Support agencies lacking procurement policies or unaware of streamlined approaches, e.g., AAB4217
Project Management	Support agency staff with energy project administrative needs.
Project Monitoring	Support agency staff with ongoing monitoring, adaptation, and optimization



Figure 5. HSEF staff conducting FEIs at facilities throughout Inyo and Mono Counties.

Town of Mammoth Lakes—a patchwork of rural and resort properties

The Town of Mammoth Lakes (TOML) is an incorporated town of approximately 7,000 residents and regularly hosts tens of thousands of visitors for its recreational and vacation amenities. The Town owns and operates a wide variety of facilities including offices, maintenance yards, softball fields, a summer swimming complex, a winter ice rink, airport facilities, and more. With limited workforce capacity and modest funding, it's a challenge to simply keep everything running, much less optimize energy performance and retrofit modern equipment. As is typical of rural areas, its staff often wear many hats.

Location and access. At first glance, TOML might not seem all that rural. It has grocery stores, high-end lodging and restaurants, and world-class recreation facilities. However, it is truly at the end of the supply chain, and a long way from the centers of commerce that serve the built environment (Los Angeles is a five-hour drive; the San Francisco Bay Area is at least six hours). Components for heating, HVAC, and other building systems must come from those metro areas, from Reno, Nevada, or possibly from the central valley of California—all multi-hour drives away. The relatively few contractors and technicians in the area are busy and expensive, due in part to the lack of competition but also because everything costs more at the end of the road. Additionally, limited expertise in the workforce has an effect. The people who work on mechanical and electrical systems in rural areas like Mono and Inyo counties are also less likely to benefit from the advanced training available in more populated areas. For example, the International Brotherhood of Electrical Workers operates a training center in Los Angeles⁵ that

⁵ The Electrical Training Institute, operated by the IBEW, is in the central Los Angeles area at 6023 Garfield Avenue, Commerce, CA 90040.

teaches electricians how to install modern electrical systems such as solar photovoltaics, batteries, and transfer switches, as well as efficient methods for 100A-to-200A residential service upgrades for electrification.⁶ Electricians in Mono County would have to make a long trip for this type of training.

Resort town challenges. The Town operates some complex facilities that would benefit from big-city know-how. A key example is the Community Recreation Center, known locally as the Ice Rink, an indoor NHL-sized ice rink with a separate curling sheet, completed in late 2023. The mechanical systems for the enclosed structure include heat-recovery ventilation units, several hundred kilowatts of refrigeration for the ice sheets, and a 12,000-cfm dehumidification air handler with 30 tons of electric refrigeration (separate from the ice chiller), as well as four-stage propane-fired regeneration.

These systems are complicated enough, but disputes between the Town and the general contractor unfortunately deteriorated to a point where the two parties separated prior to building completion. A proper commissioning of the systems was never completed, and the building's sophisticated monitoring system is inoperative. This is exactly the kind of facility that would significantly benefit from retro-commissioning efforts. HSEF is working to facilitate the commissioning process and control systems through SoCalREN. The Town's Facilities and Asset Manager is eager to ensure this expensive and energy-intensive facility is running properly and will serve the town for years to come.⁷

Propane dependency. Another significant issue for the Town is heating fuel. Remote areas are seldom connected to the fossil gas grid and must rely on propane for heating buildings, DHW, snowmelt systems, swimming pools, and various process loads. Propane is a costly fuel delivered mostly by truck that is unregulated other than for safety. Customers technically have a choice between companies, but the choices can be quite limited as companies get sold and bought leaving fewer options, less competition, and higher prices. Franchise agreements can last for decades and lock in punitive pricing. Deliveries by truck tend to occur erratically, making it difficult to track usage with any precision. Invoices from the propane company may include deliveries to several facilities, further complicating the effort to measure usage. A major hurdle for rural is the lack of incentives regarding fuel switching -- or switching from propane to electricity-- which is not eligible for incentives, further hindering conversion. At the town's swimming pool—which is outdoors and only operates during summer—a low-efficiency propane boiler heats the main pool. When the authors asked about propane consumption, the response was, “Well, the propane truck has to come twice a week,” indicating extremely high costs.

Icy innovation at a cost. Another energy-gobbling installation at TOML is one that could scarcely be imagined in LA or the Bay Area: a heated street section at a dangerous intersection, where a steep downhill leads into a heavily-traveled main road.⁸ After dealing with multiple crashes at this location, the Town repaved the downhill section with in-slab snowmelt tubing fed by a two million btu-per-hour propane boiler. The electrical loads for pumping antifreeze

⁶ Personal visit by author Houghton, November 15, 2016.

⁷ The TOML CRC does have some interesting energy features such as an all-electric Zamboni ice surfacing machine. The concrete trough where excess ice is dumped to be melted and drained is served by a pair of high-efficiency condensing tankless water heaters which-burn propane.

⁸ One of the authors—we'll not say which—actually crashed at this location.

through the piping are relatively modest, but the propane burn and cost is substantial. A key measure for snowmelt systems is control, which can be tricky to optimize. Some snowmelt systems end up heating the pavement when it's not snowing, and may even run all summer long. Fortunately, the Mammoth area has technicians that know their way around snowmelt systems, as they exist at many locations such as hotel entrances and steep private driveways.

Partnerships that Reach Farther: Hyper-Rural Participation

In 2025, HSEF and SoCalREN worked with the Hilton Creek CSD, a small sewer district in the Mono County community of Crowley Lake to complete a blower upgrade at their wastewater treatment plant (WWTP). See Figure 6 for one of the most beautiful backdrops of any WWTP in the country. With fewer than 400 connections in the CSD, the project was small in terms of dollars and scope but was impactful to the district providing them with an anticipated 828,120 kWh in lifetime savings. To achieve this upgrade, Hilton Creek CSD leveraged SoCalREN's project management and technical assistance services, assistance with procurement, \$25,725 in incentives, and \$58,842 for bridge financing. The project had a short return on investment and simply would not have happened without the REN's support.



Figure 6. Clockwise from left: Hilton Creek CSD WWTP; Board of Director's presentation; General Manager with new equipment.

Another hyper-rural project currently in the evaluation phase is supporting Inyo County with their efforts in Tecopa. As previously stated, Tecopa is in the far southeastern portion of Inyo County just outside the Death Valley National Park boundaries and has a very small population. In 2025, the community experienced a five-day electrical outage during 90–100-

degree Fahrenheit temperatures after which the County Board of Supervisors prioritized finding a solution. Inyo County identified the existing albeit dated facility, the Tecopa Community Center, as a building to transform into a resilient cooling center. The HSEF and SoCalREN teams have evaluated the facility for solar and storage and are undergoing an Energy Resilience Action Planning process to gather input on community needs and to assist with outside funding applications.

On the Horizon

All projects take time to come to fruition, but they may take even longer in rural communities where public agency staff is under-resourced. Additionally, reputation and credibility carry significant weight in small towns. Moving at the speed of building trust often means investing time before a project is agreed upon and being patient throughout the process.

Thanks in part to this approach, the HSEF-SoCalREN partnership is supporting three additional projects besides the one with Inyo County and Tecopa. The Bishop Paiute Tribe currently has two projects in the evaluation phase. The first project is participation in SoCalREN's Tribal Community Resilience Program which solicits a tribal community-designed proposal that identifies tribal energy efficiency goals and aims to fill identified gaps. The second project is evaluating a casino for thermal storage technology that could reduce the building's energy usage and consequent bills. Another project currently in evaluation is with a local Fire Protection District assessing and supporting their desired retrofits to their workforce housing. Like the Hilton CSD WWTP project, most of these projects are comparatively small in size and scope to projects in urban areas, but they have potential for considerable impact on the respective agencies. HSEF believes, like Medina, that the greatest long-term potential is reaching underserved communities.

For Rural, By Rural

The movement to reach rural communities expanded with the most recent CPUC-approved RENs: the Northern Rural Energy Network (NREN) and the Central California Rural REN (CCR REN). Both RENs' program offerings were designed with specific consideration for the unique needs of rural communities. The CCR REN formed to serve the geographically hard-to-reach, underserved, and disadvantaged communities in the Central Coast, San Joaquin Valley, and Eastern Sierra regions. Comprised of local governments and nonprofit organizations (one of which is HSEF), it is administered by the County of San Luis Obispo (SLO). Under Director of Planning and Building Trevor Kieth's leadership, SLO County has a long history in energy program participation; that experience lends itself to CCR REN's residential, commercial, workforce development, and codes and standards offerings to the 14 counties in the REN's territory.

An example of a tailored program is the CCR REN's Commercial Energy Improvement Program. It brings services to the region's small businesses through a turnkey direct install offering. A core element of the program is recruiting and training locally based Clean Energy Advisors (CEA) who conduct direct, in-person outreach and guide participants through projects. CEAs, many of whom begin with little to no prior energy-related experience, receive classroom education and obtain certifications, hands-on field experience, and mentorship from experienced industry professionals for several months before interacting directly with customers. CEAs then serve as trusted local contacts helping customers understand opportunities, confirm eligibility,

and coordinate next steps. Much like SoCalREN's Regional Partner Model, community associations—such as people playing in the local hockey league or simply shopping at local businesses—ease outreach efforts and promote a level of trust in the program.

Another way to serve rural is through the CCR REN's Codes and Standards program. The Energy Code Coach program provides energy code support for free to local Authorities Having Jurisdiction (AHJs) in an effort to increase code compliance. Trainings, both virtually and in-person, have been offered on topics such as Title 24 energy code, heat pumps, advanced insulation installation. Regionally relevant topics like education on heat pumps for cold climates and home hardening for wildfire preparedness and smoke safety are offered to benefit design and construction professionals, as well as and interested residents.

Energy Wrangler: Connecting Services and Communities

In rural spaces, there is no shortage of opportunity to raise awareness and provide education and opportunities around energy efficiency. As such, the HSEF is always on the lookout to bring programs to the rural region. In 2024, HSEF realized only 37% of Mono County's and 64% of Inyo County's⁹ eligible, income-qualified residents were enrolled in Southern California Edison's (SCE) California Alternative Rates for Energy (CARE) program and that most of those residents would qualify for SCE's Energy Savings Assistance (ESA) program. Naturally, HSEF decided to respond to SCE's ESA Marketing and Outreach RFP.

The ESA program offers deep energy retrofits and weatherization services to CARE eligible customers. Weatherization is an important remedy that can provide significant benefits in the extreme climates of the Eastern Sierra. During the procurement selection period, SCE's Technical Purchasing Specialist informed HSEF that their per lead quote was twice that of the low bidder. Pulling from her local knowledge and outreach tactics, the Executive Director countered, "Did the low bidder propose taco nights at the mobile home park community centers in our remote region, and are they going to partner with local food banks to do outreach to reach potential eligible residents?" The answer was no, and the proposal was awarded to HSEF, which has diligently engaged with the utility and contractor to ensure—before engaging in outreach—that the services can be delivered to the community.

To add another layer of complexity to the rural locale, the region's electricity is co-served by SCE and the municipally owned Los Angeles Department of Water and Power (LADWP). For many years, LADWP's Community Partnership Outreach Grant (CPOG) was only offered in their southern California territory and not in the Owens Valley (OV). Rick Phelps, HSEF's former Executive Director, regularly reached out to their energy efficiency department on this matter, and the current Executive Director (author Bold) chased down David Jacot, LADWP's Director of Energy Solutions, at multiple conferences to advocate for funding to support the local OV-LADWP connection. This persistent advocacy worked, and HSEF was awarded the grant 2018.

Every year since, HSEF continues to be a CPOG recipient and sets aside a portion of the annual funding for community projects. Past projects include lighting retrofits at Inyo County parks, funds for air source heat pumps and water heaters at the new Eastern Sierra Business Resource Center, and energy engineering services for the City of Bishop to evaluate pool pump

⁹ Annual Report of Southern California Edison Company (U 338-E) on Energy Savings Assistance and California Alternate Rates for Energy Programs For 2024

replacements resulting in a more efficient pump for the wading pool. Since MOU- served buildings are ineligible for the public goods charge funding programs associated with IOUs, HSEF requested and received approval from LADWP to perform FEIs and energy analysis to LADWP-served buildings in Inyo County portfolio. It simply didn't make sense for the agency to know their energy profiles on only a portion of their building portfolio.

In addition to building rapport with the utility companies serving its region, HSEF has actively sought and brought various other program offerings to boost its communities. These include the California Green Business Network, Energy Upgrade California, Power Saver Rewards Program, the Driving Clean Assistance Program, and CA Department of Food and Agriculture's Healthy Stores Refrigeration Program.

True Grit –

Like the common adage states, 'showing up is half the battle.' In small, rural places, people see who's there...and who's not. Showing up has certainly contributed to HSEF successfully connecting with its communities. Here are some examples:

- Annual judging of 6th grade science class solar oven cook-offs
- Organizing Earth Month Sustainability Series and Tours
- Providing energy efficiency lessons at Tribal Environmental Youth Camps
- Drive-thru Trick-or-Treating at the Fairgrounds during Covid
- Filling hundreds of mini totes with flyers, lightbulbs, and candy, to be distributed during food drives
- Roping friends into riding bikes or pulling a giant LED light bulb in the 4th of July parade
- Staffing a booth at the County Fair
- Connecting outlying fire department with the Solar Generation Incentive Program (SGIP) to receive storage – that ultimately served the remote community for several after the power was taken out from an avalanche.
- Coordinating hands-on contractor training
- Attending local contractors' association monthly meetings
- Supporting the local high school's construction program and instructor



Figure 7. Clockwise from top left: HSEF staff at the Lone Pine Paiute Shoshone Earth Day event, The Village in Mammoth 4th of July celebration, Bishop's Christmas Parade, HSEF staff and friends at the Mammoth Lakes 4th of July Parade.

Where The Trail Leads Next

Remote and rural living like that in the Eastern Sierra requires a broad, savvy, and flexible skillset. When the nearest major airports are 3.5+ hours away, the big box stores aren't much closer, and folks often pay for additional insurance to cover medical flight evacuations, it's apparent that getting things done takes a little extra effort. Residents of rural know this and live it, and they're often heartier for it. Just because they're hard-to-reach doesn't justify being left behind.

Ensuring rural communities are included in the clean energy transition is ambitious yet achievable when supported by well-designed programs and sufficient funding and have access to knowledgeable energy professionals—and are guided by strong, trusted local relationships. California's RENs will continue to play a key role in providing these resources and addressing long-standing inequities. Partnering with local organizations that have deep connections to their communities is essential to making these efforts successful.

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