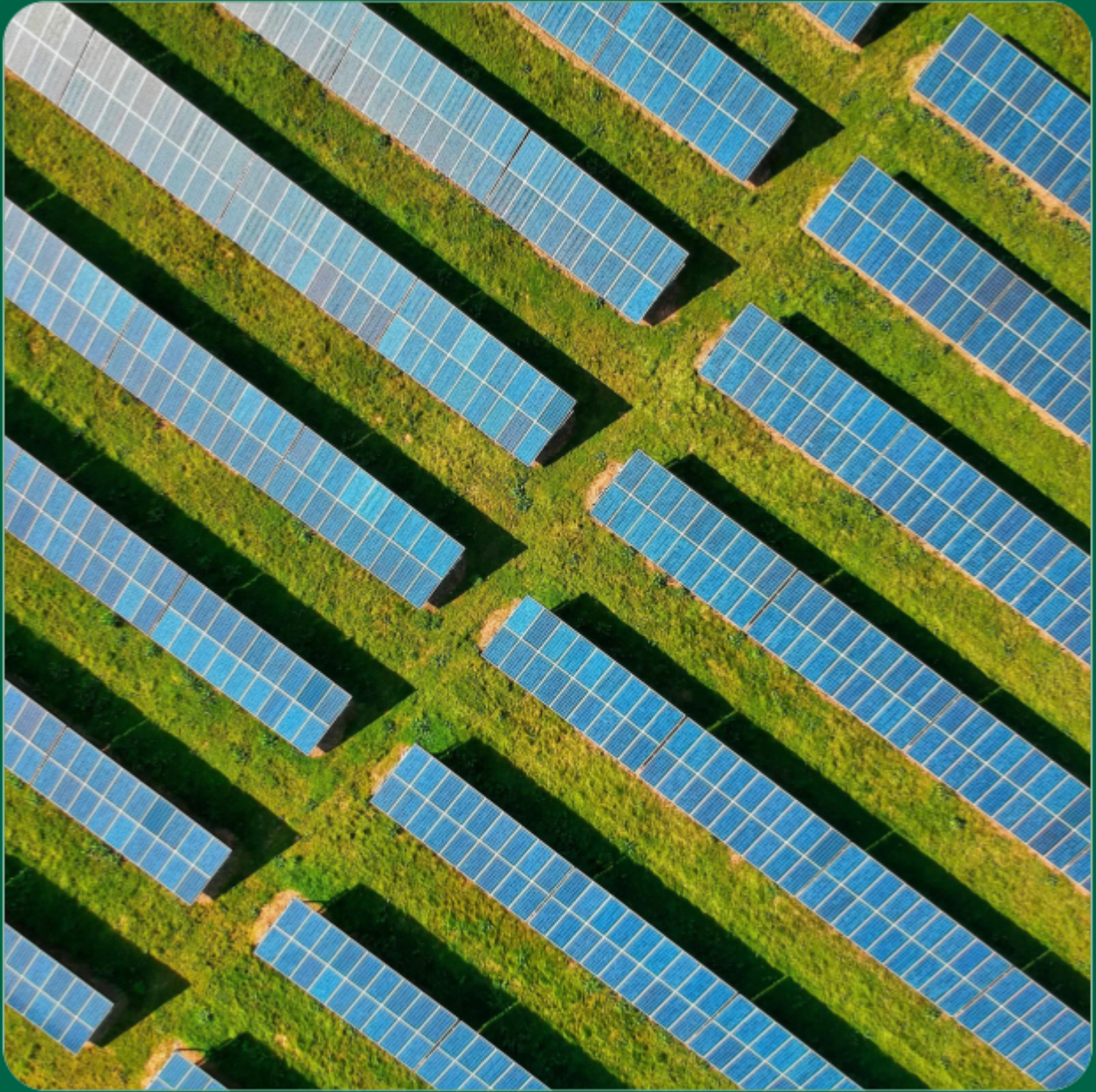




Nonprofit Evaluation: **Casa Pueblo**

February 2026



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This is a non-partisan analysis (study or research) and is provided for educational purposes. Unless otherwise cited, information in this nonprofit evaluation comes from direct correspondence with Casa Pueblo.

Casa Pueblo is a community-based organization that is fiscally sponsored by [Hacer Cambio](#), a 501(c)(3) tax-exempt organization in the United States.

Questions and comments are welcome at hello@givinggreen.earth.

Summary

- **What is Casa Pueblo?**

Casa Pueblo is a long-standing, community-based environmental organization headquartered in Adjuntas, Puerto Rico. Founded in 1980, it works at the intersection of environmental protection, community self-determination, and sustainable development. Over the past two decades, Casa Pueblo has become a leading practitioner of community-owned renewable energy in Puerto Rico. It deploys solar energy systems, microgrids, and resilience hubs to support households, small businesses, and critical community infrastructure, while embedding this work in education, culture, and local governance.

- **How could Casa Pueblo support climate objectives in Puerto Rico?**

Casa Pueblo improves energy resilience by deploying community-owned solar and battery microgrids that operate during outages and by strengthening local technical capacity through applied research and hands-on training to support broader replication.

- **What is Casa Pueblo's theory of change?**

Casa Pueblo's theory of change is grounded in the belief that Puerto Rico's capacity for climate adaptation and the challenge of its **colonial dependency** must be addressed from the ground up through processes of community-led decolonization within our political reality. This pathway centers on the defense of our territories and natural resources, cultural resistance, and the collective development of community-owned distributed solar systems and networked microgrids supported by local technical capacity, enabling communities to build energy independence from the ground up while strengthening resilience, reclaiming democratic control over essential infrastructure, and advancing a just ecosocial transition.

- **Is there room for more funding?**

Casa Pueblo has meaningful room for additional funding, particularly to advance innovation and development while expanding solar microgrids across the urban area of Adjuntas as a replicable model for other municipalities. The long-term aspiration is **Adjuntas Pueblo Solar**—a town-scale ecosystem of interconnected community microgrids that demonstrates how local energy independence can be built from the ground up. While core operations are sustained through earned revenue and general donations, energy initiatives often rely on one-off, project-specific grants. Additional funding would allow Casa Pueblo to accelerate the deployment of community solar microgrids, strengthen applied research and workforce training through the **Living Energy Innovation Laboratory**, and amplify a

model of energy resilience rooted in community ownership and local technical capacity.

- **Are there major co-benefits or potential risks?**

The long-term scalability of networked microgrids may be limited by regulatory or utility-level constraints related to interconnection rules or the implementation of research-based innovations. However, Casa Pueblo approaches these challenges through a form of community-based advocacy grounded in action—demonstrating viable solutions in practice in order to help reshape regulatory frameworks and institutional structures. By building and operating working models of distributed solar and community microgrids, the organization seeks not only to improve local resilience but also to catalyze policy evolution that enables broader adoption of decentralized, community-driven energy systems.

- **What are the key uncertainties and open questions?**

The key uncertainty is less about whether interconnected community microgrids will emerge beyond Adjuntas, and more about **when the current lag phase between innovation and broader adoption will begin to close**. The expansion of networked microgrids will depend in part on regulatory frameworks, utility cooperation, and institutional willingness to adapt to decentralized energy systems. Through community-led implementation and advocacy grounded in action, Casa Pueblo seeks to reduce this lag phase—demonstrating viable alternatives in practice and helping accelerate the transition toward a decentralized energy system rooted in community ownership, resilience, and local capacity.

- **What is the bottom line and what are the next steps?**

This research was conducted as part of a consulting project to help a client find the most impactful climate nonprofits in Puerto Rico. As explained in our strategy report produced as part of this engagement, we recommended that the client focus on energy resilience and reliability. As part of this strategy, we recommended that our client make a grant to Casa Pueblo based on its strong track record of deploying resilient community-owned energy systems and its strategic focus on coupling infrastructure with applied research and workforce training to support scalable, decentralized resilience.

Donors interested in supporting its work can make a [direct donation](#) to **Casa Pueblo**.

What Is Casa Pueblo?

[Casa Pueblo](#) is a community-led organization in Puerto Rico focused on environmental protection and community self-management, using renewable energy, culture, and education to build autonomy and resilience from the ground up. It began in 1980 as a community-led environmental defense effort to oppose plans for copper mining that threatened Adjuntas—where it is headquartered—and the surrounding mountain range.

Casa Pueblo's work centers on environmental protection, community self-management, and local resilience. Its main areas of work include: (1) renewable energy and energy resilience through community-owned solar installations, microgrids, and resilience hubs such as the [Plaza de la Independencia Energética](#); (2) environmental conservation and education, including the protection and stewardship of [Bosque del Pueblo](#) and environmental learning through the [Bosque Escuela](#); and (3) cultural and economic initiatives that support community identity, local livelihoods, and public engagement, such as [Radio Casa Pueblo](#) and [Café Madre Isla](#).

How Could Casa Pueblo Address Energy Resilience and Reliability in Puerto Rico?

Key Ideas: Casa Pueblo's Strategy

- **Casa Pueblo focuses on distributed energy to advance energy resilience and community self-sufficiency through locally owned renewable systems.** Puerto Rico's electricity system is highly centralized, fossil-fuel-dependent, costly, environmentally harmful, and exposed to extreme weather, resulting in frequent outages and long restoration times. Distributed solar, storage, and microgrids are well-suited to improve resilience in this context by producing power close to where it is consumed, reducing energy costs while advancing the democratization of the energy sector through community ownership and local control of generation.
- **Puerto Rico's grid regularly leaves communities without power and essential services.** Recurrent grid failures, high electricity costs, and limited local control over energy systems undermine community safety, health services, food security, and economic activity—particularly in rural and mountainous regions like Adjuntas. The organization installs solar systems for homes, small businesses, and critical infrastructure

and interconnects them into microgrids and community energy hubs that maintain electricity during grid disruptions.

- **Casa Pueblo promotes scalable community-owned renewable energy, primarily solar with battery storage, as a means to shift energy production from centralized utilities to locally governed systems that can operate independently during outages.** By piloting networked microgrids and developing a community energy laboratory, Casa Pueblo seeks to build local technical capacity and generate real-world evidence on how decentralized systems can enhance energy resilience and reliability at scale. In doing so, this approach also **generates wealth that remains within the community**, supporting a locally rooted and alternative model of development grounded in energy independence, economic circulation, and community empowerment.

From Centralized Grid Failure to Community Energy Resilience

Casa Pueblo began investing in solar energy in the late 1990s and achieved full energy independence for its own facilities before Hurricane María in 2017. When the storm left Puerto Rico without power for months, Casa Pueblo functioned as an “energy oasis,” demonstrating in practice how distributed solar with battery storage can sustain essential services when the centralized grid collapses. Since then, the organization has expanded this approach across homes, small businesses, and critical community infrastructure, increasingly interconnecting systems into microgrids that can operate autonomously during outages.

Casa Pueblo’s ongoing work to scale the deployment of distributed energy links, energy resilience, and reliability directly to community well-being by focusing on maintaining electricity for medical equipment, food preservation, communications, and local economic activity. By prioritizing locally owned, distributed energy systems over centralized generation, Casa Pueblo’s approach reduces exposure to single points of failure and reduces outage impacts, making energy resilience a foundational component of climate adaptation in Puerto Rico.

More recently, Casa Pueblo has moved beyond individual installations toward networked microgrids and community energy hubs, using real-world operation during outages to generate practical knowledge about system performance, governance, and reliability. Its proposed Living Energy Innovation Laboratory represents a formalization and scaling of this work, transforming existing community infrastructure into a structured space for experimentation, training, and data generation. By grounding innovation in operating systems rather than simulations alone, the laboratory is intended to strengthen

local technical capacity and produce transferable insights on how community-owned energy systems can improve resilience and reliability across Puerto Rico and similar contexts.

Casa Pueblo's Strategies

Deploying Community-Owned Distributed Energy and Microgrids

Casa Pueblo advances energy resilience by deploying community-owned solar photovoltaic systems with battery storage that reduce dependence on Puerto Rico's centralized electricity system. Over the past two years, these activities have included the installation, expansion, and maintenance of distributed solar systems serving homes, small businesses, and critical community facilities in and around Adjuntas. Systems are designed to operate independently from the grid during outages, providing local continuity of service during grid disruptions.

More recently, this strategy has emphasized microgrid development and interconnection, linking individual solar installations into community energy hubs.

These hubs are configured to support multiple users and prioritize essential loads, creating shared infrastructure that improves reliability under variable weather conditions and prolonged outages.

Developing Applied Research, Training, and Community Energy Knowledge

In parallel with physical deployment, Casa Pueblo engages in applied, community-based research and training to catalyze local innovation and capacity development. Over the past two years, the organization has focused on formalizing its experimentation with microgrid configurations, controls, and operational practices through the development of the Living Energy Innovation Laboratory. This work centers on testing mature, deployable technologies within existing community energy systems rather than relying solely on laboratory simulations.

Activities under this strategy include collaborating with engineers, academic institutions, and technical professionals to generate operational data, refine microgrid designs, and develop hands-on training materials. These efforts aim to build local technical capacity, support a renewable energy workforce, and document practical lessons that can inform the replication of resilient, community-owned energy systems across Puerto Rico.

Evidence of Casa Pueblo's Ability to Execute Its Activities

Deployment of Community-Owned Distributed Energy and Microgrids

Our impression is that Casa Pueblo demonstrates a high ability to execute community-owned distributed energy and microgrid projects. The organization has decades of experience implementing solar installations in real-world community settings and has progressively increased the technical and organizational complexity of its work, from individual solar systems to networked microgrids serving multiple users. Over the past two years, Casa Pueblo has continued to manage the installation, maintenance, and operation of these systems while adapting them to local needs and constraints.

Casa Pueblo's deep community trust, long-term presence in Adjuntas, and hands-on approach to project implementation strengthen its capacity to execute. Rather than relying solely on external contractors, the organization maintains close oversight of system design and use, allowing it to respond to operational challenges as they arise. This embeddedness reduces implementation risk and supports the sustained functionality of energy systems during prolonged outages and extreme weather events.

Development of Applied Research, Training, and Community Energy Knowledge

Casa Pueblo also demonstrated its ability to execute in relation to applied research and training, particularly where these activities are tightly coupled with existing infrastructure. **The organization has a track record of collaborating with universities, community groups, engineers, and technical professionals to generate and share knowledge derived from operating energy systems, rather than from theoretical or pilot-only settings.** Recent efforts to formalize this work through the Living Energy Innovation Laboratory build directly on ongoing experimentation already taking place within Casa Pueblo's microgrids and community energy hubs.

Importantly, Casa Pueblo demonstrates an ability to coordinate across disciplines—technical, educational, and community-based—while maintaining clear ownership of the process within the community. Its experience hosting students, researchers, and practitioners, combined with its operational control over energy assets, positions the organization well to execute training and research activities that are practical, iterative, and grounded in local conditions.

What is Casa Pueblo's Theory of Change?

The theory of change for Casa Pueblo is grounded in the premise that energy resilience and reliability in Puerto Rico are best achieved through community-owned, distributed energy systems combined with local technical capacity and knowledge sovereignty. Rather than relying on top-down reform of a centralized grid, Casa Pueblo's approach emphasizes bottom-up implementation, experimentation, and learning within real communities exposed to climate change impacts.

For Casa Pueblo, energy is not merely a commodity but a central component that intersects with multiple community priorities, including environmental protection, local economic development, education, and social wellbeing. Energy is understood as a

fundamental right that must be accessible to all, and as a tool to enable alternative models of local development.

Historically, Puerto Rico has been denied the right of self-determination through narratives that claim the island lacks natural resources to sustain its own economy. In reality, Puerto Rico possesses abundant endogenous resources—sun, wind, water, and local knowledge—capable of producing the energy required for everyday life. Harnessing these resources through decentralized renewable systems can support productive activities that generate local wealth, reduce external dependency, and strengthen preparedness for future climate crises.

In this way, community energy systems become not only a strategy for resilience, but also a pathway toward self-determination, economic circulation within communities, and a just ecosocial transition.

Theory of Change: Casa Pueblo

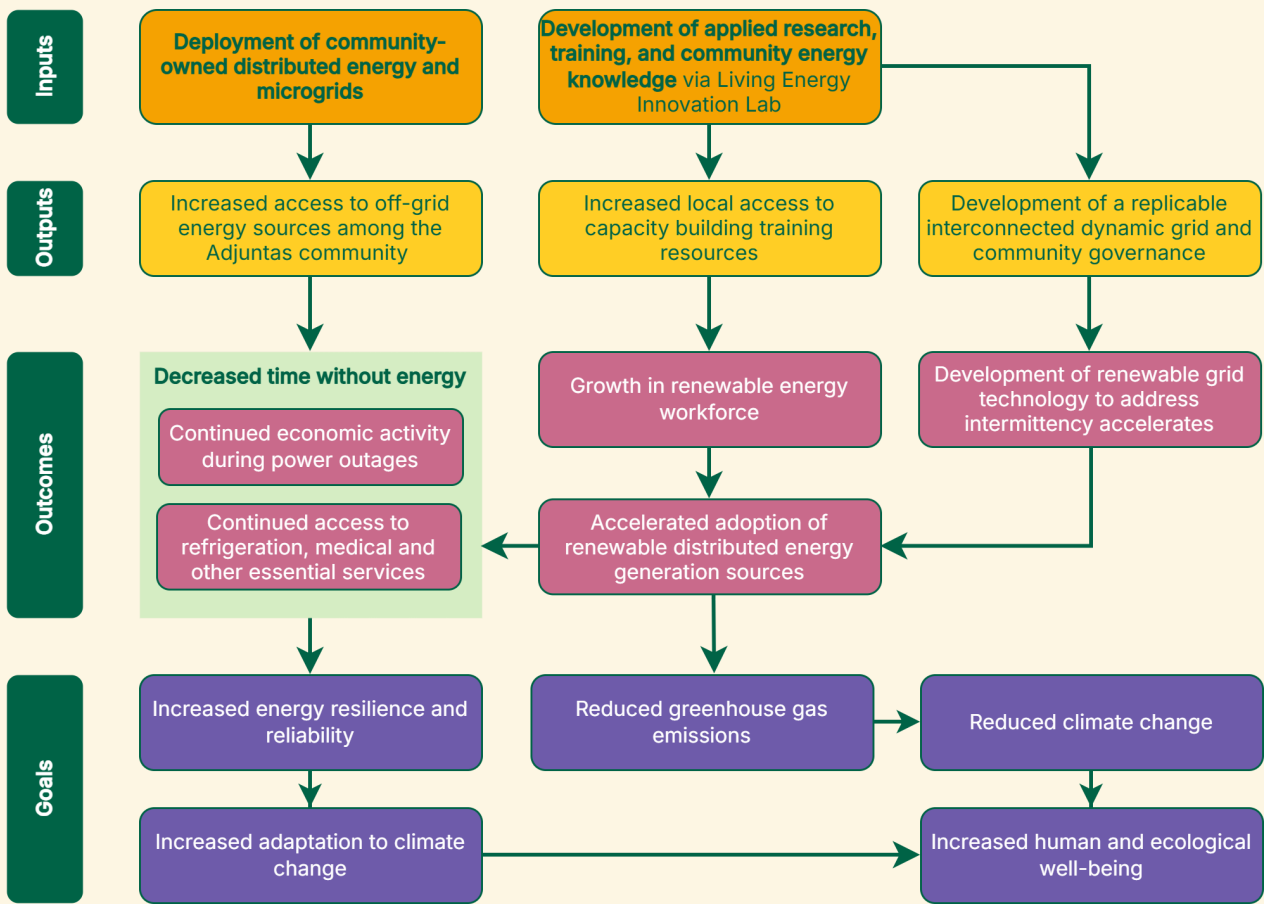


Figure 1: Theory of change diagram for Casa Pueblo

Examining the Assumptions Behind Casa Pueblo's Theory of Change

Below, we discuss and evaluate the main assumptions related to Casa Pueblo's theory of change. For each of the assumptions, we rank whether we have **low**, **medium**, or **high** certainty about the assumption.¹ Our assessment is based on both primary and secondary evidence, as well as our general impression of the plausibility of the assumption. Importantly, a number of the stages of Casa Pueblo's theory of change may not be amenable to easy measurement or quantification, are not supported by a robust evidence base, or are expected to occur in the future but have not occurred as of yet.

1. Distributed, community-owned energy improves resilience and reliability (high certainty)

We have a high certainty that community-owned, distributed energy systems (primarily solar photovoltaic systems with battery storage) can improve energy resilience and reliability in Puerto Rico. The underlying technical logic is well supported: distributed systems reduce exposure to transmission failures and can continue supplying power when centralized infrastructure collapses. In outage-prone systems such as Puerto Rico's, these systems can maintain essential loads locally during grid disruptions.

Supporting evidence includes engineering literature demonstrating the resilience advantages of distributed generation and microgrids in disaster-prone settings.² While observed performance is not uniform across installations, and long-term reliability requires sustained technical and organizational capacity, the evidence suggests the assumption of the overall relationship between distributed energy systems and improved resilience holds, leading us to assign high certainty to this assumption.

2. Casa Pueblo's community-based applied research and training enable replication of distributed energy development (high certainty)

We have high certainty that community-based applied research and training reduce barriers to adoption and can lead to broader replication of resilient, community-owned energy systems. The core logic is that complex energy systems—such as microgrids—are more likely to be adopted when communities, technicians, and institutions have access to practical knowledge, tested configurations, and locally relevant evidence, rather than abstract models or external expertise alone. By institutionalizing experimentation and

¹ We describe our certainty as low/medium/high to increase readability and avoid false precision. Since these terms can be interpreted differently, we use rough heuristics to define them as percentage likelihoods the assumption is, on average, correct. Low = 0-60%, medium = 60-80%, high = 80-100%

² "Among the aforementioned strategies, microgrids play a major role in enhancing the resilience of the power grid as it offers decentralized energy generation, supports local and critical loads, and can run in islanded conditions during grid disturbances or emergencies such as natural disasters." [Thapa et al, 2024](#) (p. 1)

training through the Living Energy Innovation Laboratory, Casa Pueblo aims to convert experiential knowledge into transferable capacity.

Supporting evidence includes Casa Pueblo's long-standing role as a reference site for community energy initiatives, repeated requests from communities and organizations seeking to learn from and replicate its work, and its active collaborations with academic and technical partners. While replication remains contingent on regulatory, financial, and institutional conditions beyond Casa Pueblo's direct control, the organization's credibility, existing partnerships, and demonstrated knowledge-sharing make this assumption likely to hold in most contexts. On balance, we assign high certainty to this assumption.

Is There Room for More Funding?

- *Financial information for the current and upcoming year is available upon request.*

Casa Pueblo receives donations from visitors and donation campaigns, and generates some income from tours and the sale of its coffee. Its energy projects require additional funding beyond its operations budget. Casa Pueblo emphasized that the one-off nature of project funding often limits energy resilience work.

Marginal dollars are likely to go toward:

1. **Establishing a Living Energy Innovation Laboratory:** hiring/retaining critical personnel (e.g., a lab director/engineer profile), procuring equipment, and building training modules.
2. **Expanding the community microgrid footprint:** extending the Plaza/microgrid concept to additional nearby households and community loads, generating a ripple effect that demonstrates the model's ability to scale and catalyze a broader ecosystem of networked community microgrids.
3. **Scaling workforce development and training delivery:** providing hands-on instruction using real equipment.

Casa Pueblo's general operation budget for the last three years was approximately \$350,000 annually. Nevertheless, its energy resilience and reliability work is primarily supported through one-off, project-specific funding, including philanthropic grants, community and diaspora fundraising, benefit events, and visitor donations. These funding sources are typically restricted to specific installations or short-term initiatives (e.g., individual solar homes, microgrids, or early laboratory activities), rather than providing sustained, programmatic support for energy resilience and reliability work. Core organizational operations are funded separately through earned revenue and general donations, with limited flexibility to cover capital-intensive energy projects.

This funding landscape suggests meaningful room for more funding. The one-off nature of current support indicates that additional philanthropic funding would likely enable activities that would otherwise be delayed or not undertaken—particularly system-level efforts such as applied research, training, and coordination through the proposed Living Energy Innovation Laboratory.

Are There Major Co-Benefits or Potential Risks?

We think the most critical potential risks of Casa Pueblo's work are related to the scalability of networked microgrids and potential regulatory or utility-level constraints. If regulatory barriers restrict interconnection or limit the implementation of research-based innovations, the long-term scalability of this model could be limited.

Key Uncertainties and Open Questions

- **Model replication:** It remains uncertain whether Casa Pueblo's networked microgrid model will be replicated at a meaningful scale beyond Adjuntas.
- **Stakeholder buy-in:** The long-term scalability of networked microgrids depends on regulatory approval and utility cooperation, which may constrain expansion.

Bottom Line and Next Steps

This research was conducted as part of a consulting project to help a client find the most impactful climate nonprofits in Puerto Rico. As explained in our strategy report, we recommended that the client focus on energy resilience and reliability. As part of this strategy, we recommended that our client make a grant to Casa Pueblo due to its demonstrated ability to deploy community-owned distributed energy systems that remain operational during prolonged grid outages, its integrated approach combining infrastructure deployment with applied experimentation and workforce development, and its strong institutional credibility and community trust that reduce implementation risk.

Casa Pueblo works to deploy community-owned distributed solar and battery systems that can operate independently during centralized grid failures, interconnect these systems into microgrids serving multiple users, and develop applied research and hands-on training through the Living Energy Innovation Laboratory. By combining distributed energy deployment with experimentation and technical capacity-building, Casa Pueblo aims to reduce the impacts of outages in participating communities while addressing structural barriers to scaling decentralized energy systems.

We remain uncertain about the extent to which networked microgrids can scale meaningfully beyond Adjuntas, given regulatory and institutional constraints.



Giving Green was founded to help donors cut through the complexity of climate philanthropy and direct their resources for maximum impact.

Our founder, Dan Stein, Ph.D., spent 15 years developing evidence-based strategies in global philanthropy. He saw people eager to fight climate change but paralyzed by its scale. In 2019, with support from IDinsight, he launched Giving Green to rigorously evaluate solutions and share clear guidance.

What began as a side project is now a team directing tens of millions of dollars to high-impact initiatives. Our success is shared—with donors ranging from kids donating allowances to retirees investing in a better future. We believe anyone can start small and still make a huge difference.

Thank you for joining us on the path to net zero. Together, we keep moving forward.