

50 STATES, 50 FIXES

How Native Homes in New Mexico Are Tapping the Sun

An Indigenous-led nonprofit group is bringing solar power to Navajo Nation and the Hopi tribe, where about 15,000 households lack access to electricity.



Nicholas Ashley, left, and Parvannah Lee, working with the nonprofit Native Renewables, at a solar installation at Graham Beyale's home in Shiprock, N.M.

▶ Listen to this article - 6:28 min [Learn more](#)

📁 Share full article



💬 37

By **Cara Buckley** Photographs and Video by Ramsay de Give

July 22, 2025

Until mid-June, Graham Beyale was living off the usual hodgepodge of makeshift power options used by the many people in Navajo Nation who don't have electricity.

In the winter, he used a propane gas heater and a wood stove to heat his decades-old mobile home, and small portable solar panels to charge his phone and run some lights. In the summer, when temperatures reached the triple digits, he'd run his mini-fridge off the panels for a few hours when the sun was brightest, and plug in a fan.

50 States, 50 Fixes is [a series about local solutions](#) to environmental problems. More to come this year.

Mr. Beyale, who is 35 and a farmer, lives near Shiprock, in the part of Navajo Nation that covers northwestern New Mexico. In the Navajo Nation, which stretches into parts of Arizona and Utah and also wraps around the Hopi reservation, [an estimated 14,000 of households are without electricity](#), often relying on kerosene lanterns, extension cords hooked up to car batteries and ice chests.

For Mr. Beyale, life took a turn in June with the arrival of photovoltaic solar panels, which were provided and installed by Native Renewables, a 10-year-old nonprofit group. It connects Navajo and Hopi households to reliable solar energy while also

generating jobs on tribal land. The panels have battery storage, and Mr. Beyale's panels sit on a stand-alone pedestal outside his wood-paneled mobile home, which he shares with two dogs and three cats.

In the days since the new panels went in, as daytime temperatures soared, Mr. Beyale has enjoyed modern conveniences that were once out of reach.

His mini fridge stays on, cooling drinks and even making ice. He previously had to be extremely cautious about using precious power at night, but now can work on his computer later, running his online business selling teas, produce and the seeds of Indigenous plants. He even has a portable air-conditioner, a swamp cooler, which offers respite from the searing heat.



Graham Beyale — with dogs Rockett (lying down) and Xolo (behind him) and cat Finnick — spent six months at Standing Rock, in North Dakota, protesting the Dakota Access Pipeline. After that, he said “it was always the goal to be able to live sustainably,” he said.

“That has been very, very helpful,” Mr. Beyale said. “Normally I’d have to go to family members’ homes when it gets too hot. I’ve been able to spend the majority of my summer here.”

As many as one in five households in Navajo Nation and the Hopi reservation are not connected to the power grid. Those that do have electricity often pay rates that are far more than the national average. Plans to expand solar energy projects into underserved communities were thrown into question after the Trump administration froze \$7 billion in funds allocated by Congress, but the Environmental Protection Agency [has since released the funds](#), including \$500 million set aside for tribal projects.

While Native Renewables has received some federal funding, it runs largely on donations and philanthropic grants. Founded in

Editors' Picks



Ralph Lauren, 'The Gilded Age' and Black Affluence

2015 by two Indigenous women, the group has grown from two employees to 20, nearly all of them Indigenous, including skilled technicians who graduated from the group's work force training program. The nonprofit has provided solar panels to 119 homes free of charge. Each system, including labor, installation and five years of maintenance, is valued at \$27,000 to \$30,000.

"Some families that we have supported thought that they would never have electricity in their lifetime," said Suzanne Singer, the organization's executive director and co-founder. "It's been really incredible to hear how excited they are when it happens."

Because many of the homes are in isolated areas without cell service, planning a solar installation can be a feat. "People live in very remote areas spending one day a week to hike somewhere where they have reception," Ms. Singer said. "Our team members will try to reach them while they're herding sheep."



25 Really Easy Slow Cooker Recipes That Won't Heat Up Your Kitchen



A Maple Syrup Farmer Lands on the Upper East Side for His Next Chapter



The Native Renewables team at Mr. Beyale's home last month.





Shiprock, N.M.



Cyrus Walker, an electrician, working on Mr. Beyale's installation, with Chewy the cat.

Mr. Beyale, however, is digitally connected. He grew up in Shiprock, and in 2016 spent six months at Standing Rock, in North Dakota, protesting the Dakota Access Pipeline, a pivotal time in his life.

"It really opened my eyes to what's going on in the world," Mr. Beyale said. After that, he said "it was always the goal to be able to live sustainably."

Returning to Shiprock, Mr. Beyale was stymied by the severe housing shortage. He ended up living for two-and-a-half years in a tent on family farmland, using two small portable solar panels for lighting and to charge his phone. He began growing squash, corn, tea, beans and melons on four acres, selling his goods online and at farmers' markets. Lacking running tap water, he hauled in water.

and secured a grant for hydro panels that drew moisture from the air. With the help of family members, he built a tiny, rough log cabin until he moved into a mobile home that was a gift from elderly neighbors.

He did all this while living off the grid.

“That’s what really taught me a lot about sustainability and being able to make use of the energy that is available,” Mr. Beyale said.



Suzanne Singer, executive director and co-founder of Native Renewables; Mr. Beyale's installation; Chelsea Chee, the organization's deputy director.

The photovoltaic panels installed by Native Renewables can supply a maximum of 2,200 watt-hours each day, and the group works with families to calculate what kind of devices or appliances they can use and for how long. Washers, dryers, ovens and space heaters use too much energy, so families are encouraged to keep firewood for heat and propane for cooking.

“It’s kind of like a puzzle,” said Chelsea Chee, the organization’s deputy director. If people stay within their daily energy budget, the battery provides enough energy for three full days without the sun.

Ms. Singer said the families with the new systems report being able to finally host holiday dinners, because they have lights and can keep food in the fridge without worrying about running out of fuel. Farmers tell her that, for the first time, they can freeze their harvest, and save food for leaner months. One child was excited to be able to watch a movie all the way through without the diesel generator running out, she said.

“Being able to see some of these things happen, or the family’s eyes get really big and excited because they’ve never seen a light

turn on in their home, is the best part of the job," Ms. Singer said.