

This 20 kW PV system (shown partially completed) powers KILI radio on the Lakota Pine Ridge reservation.

Courtesy Remote Energy

giving

Powerful organizations are sharing their renewable energy expertise to do good work for people and the planet. *Home Power* profiles some of the influential solar movers and shakers that are helping create a better world.

GRID Alternatives

gridalternatives.org

In 2016, GRID Alternatives, a national nonprofit, partnered with the Richmond Housing Authority (RHA) to bring solar energy—and its cost savings—to one of the San Francisco Bay Area's most environmentally and economically disadvantaged communities. Triangle Court Apartments provides affordable housing serving families earning 50% or less than the area's median income. They are operated by RHA, the city agency that provides public housing options to low-income families, elderly residents, and people with disabilities.

GRID installed individual PV systems, ranging from 1.7 to 2.7 kW, on each of the 98 units, for a total capacity of 201.4 kW. The installation was combined with an energy-efficiency retrofit that qualified the development for no-cost PV systems through the State of California's Low-Income Weatherization Program. Together, the PV production and energy-efficiency measures are expected to reduce residents' energy bills up to 98%. The systems were installed between October 2016 and April 2017 and are expected to produce \$1.88 million of electricity and prevent 3,800 tons of greenhouse gas emissions over their 25-year lifespan.



Courtesy GRID Alternatives



Courtesy GRID Alternatives (2)

Project Details

Project name: Triangle Court Apartments

System type: Batteryless grid-tied PV

Installer: GRID Alternatives Bay Area

Date commissioned: April 2017

Location: Richmond, California

Latitude: 37°N

Average daily peak sun-hours: 5.4

Systems' capacity: 201.4 STC kW

Average annual production: 223 kWh

Average annual utility bill offset: 87%

Equipment Specifications

Number of PV modules: 760

PV manufacturer & model: JA Solar JAP6-60-265

Module rating: 265 kW

Inverters: 760 Enphase Energy M215-60-2LL-S2X IG microinverters

Inverter rated output: 215 W per microinverter

Array installation: Flush-mounted on roof

Array azimuth: 81° or 261° (depending on roof orientation)

Tilt angle: 25° to 38° (depending on roof pitch)



"I'm 65 years old and on a fixed income; the reduction of my electricity bills will help me greatly, as sometimes I have to struggle making ends meet. Thank you," shared one retired resident.

GRID and the City of Richmond have been partnering since 2011 to bring PV systems and job training to city residents. GRID coordinated with the city to qualify the Triangle Court Apartments and provided technical analysis, design, and installation.

They also worked with the property-management company to engage the residents of Triangle Court. Through GRID's unique people-first volunteer and workforce development model, local volunteers and trainees participated in the installations, gaining hands-on job experience in the local solar industry. Sixty-one job trainees received nearly 900 hours of training through the project, including students of local job training organizations Rising Sun Energy Center and Solar Richmond. The project also hosted GRID's weeklong intensive solar training program for women. GRID also provided direct energy-efficiency education for tenants to further increase their energy savings.

Grid-tied PV systems at the Triangle Court Apartments significantly offset residents' utility electricity bills.

