

Design and Installation of Community Solar System



Fig.1: SMIN Power Group technicians installing rooftop solar system.



Fig.2: Children watching TV powered by community solar system SMIN provided.

The community lives in two residential building structures and a house of worship in Kinshasa, Democratic Republic of the Congo. **They received their power from the utility company distribution system. But the power from the grid was not reliable** with daily outages lasting 4 hours. The community had purchased a **backup diesel generator which required high operating cost and was loud.**

So the community leader hired **SMIN Power Group to provide an energy solution that was reliable, cost effective and quiet.**

First, SMIN Power Group conducted a detailed site visit and interviewed the customer to assess all the needs. SMIN, then completed a load study to determine the community energy need which amounted to 100,000 Watt-hour per day. Next, **SMIN Power Group designed a grid connected rooftop solar photovoltaic (PV) system and energy storage sized to meet energy needs.** We also developed the control system to shed load and automatically switch between energy sources. SMIN was also responsible for developing a cost estimate for the PV panels, inverter, battery bank and balance of system.

SMIN Power Group installed the 20kw hybrid solar system for the community. The company coordinated the grid connection with the utility company. **Long term, the system that we installed reduces energy cost by 17% for the community.** Our solution is a one-time investment and has a payback of 8,2 years. Our solution provides clean, reliable, cost effective and quiet electricity for the customer.

SMIN Power Group is helping the community fight climate change to preserve the Earth for future generations. **SMIN Power Group designed and installed a system that will avoid 629 Metric Tons of greenhouse gas emissions over 25 years.** According to the USA Environmental Protection Agency, this is equivalent to removing 132 cars off the road for a year. It is also equivalent to avoid the CO2 emissions from 70,802 gallons of gasoline.

Type: Grid Connected Rooftop + Storage

Location: Kinshasa, D.R.Congo

Energy : 100,000 Wh/day

Payback: 8,2 years

Cost Savings: 17% over system life

GHG avoidance: 629 MT= 132 cars off the road

Avoided CO2 of 70,802 gallons of gasoline