Papua new guinea florida microgrids

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For many global missionary organizations, much of their work is completed in parts of the world with no access to electricity. Missionaries find themselves working overseas in remote locations for long periods of time and in need of creative solutions for power, water and other systems that will meet their basic needs while they are in the field.

In the East Sepik Region of Papua New Guinea, one missionary group installed a solar+SimpliPhi storage microgrid to power a 1250 sq ft bush missionary home -- providing enough power for both household use and computer equipment used in Bible translation and other missionary activities.

The microgrid is able to provide 24-hour off-grid power to a twin tub washing machine, crockpot, KitchenAid mixer, blender, flat-screen TV and occasionally an Xbox. The 12-volt side of the house requires power for a Sun Danzer Refrigerator and FreezeOn, electrical outlets that charge three MacBooks, two iPhones and three iPad minis, ceiling fans powered by 12-volt DC treadmill motors, and two 12-volt radiator fans. The system also powers a second building, which is used as a boat house and tool shed, with LED light throughout both structures.

PHI batteries were the ideal choice for the project because of their lower weight and smaller footprint, maintenance-free design, and longer lifespan. When shipping equipment over thousands of miles to remote locations such as the East Sepik Region, every square foot and pound of container space comes at a premium, and fewer replacement and maintenance requirements translate into big savings--making our brand the better value. With this project, we also facilitated transport that was conducted via small planes and canoes.

"SimpliPhi batteries eliminated the most difficult challenges we face when building microgrids in remote tropical locations. The batteries are much easier to transport and they have a good chance of lasting the entire 20 years. This means, for the missionaries we serve, Simpliphi batteries generally pay for themselves in under four years,"

The International Finance Corporation (IFC), a member of the World Bank Group, is working with PNG Power Limited (PPL) to structure a public-private partnership (PPP) that will invest, upgrade, maintain and operate new solar generation sources at a selection of mini-grid centers in Papua New Guinea (PNG). This will enable electrical distribution via systems disconnected from larger electrical grids. The project aims to improve electricity services to customers in remote areas and make PPL’s services more sustainable.

The people of Papua New Guinea stand to benefit from more reliable power and fewer carbon emissions under a project that aims to boost investment in renewable energy and improve electricity services in remote areas of the country.

Regular power cuts and the high cost of traditional alternatives - such as diesel generators - adversely affect productivity and profitability of PNG businesses and can limit employment opportunities. The goal of this project is to enable PPL to work with private partners to increase the efficiency and reliability of power generation across PPL’s remote mini-grids - serving 1.5 million people - while also introducing renewables into its energy mix and reducing reliance on diesel fuel, in turn lowering fuel costs as well as greenhouse gas emissions.

Improving electricity supply and investing in renewables is key to powering a green, resilient, and inclusive recovery for PNG, which has been hit hard by COVID-19. Access to electricity allows schools and hospitals to better deliver essential services and is a vital to the private sector, including SMEs and industry.

Despite PNG being a resource-rich nation with abundant sources of energy, access to power is very limited. It’s estimated only 13 percent of people have access to on-grid electricity, mainly in urban areas. In remote areas, access is unreliable, blackouts are frequent, and costs are high. To ensure a reliable supply of power, many larger business customers generate their own power, which undermines the financial sustainability of the network.

“By boosting access to reliable, affordable and cleaner power, this project has the potential to improve many peoples’ lives while contributing to a sustainable economic recovery from the devastating impacts of the ongoing COVID-19 pandemic,” said IFC Resident Representative for Papua New Guinea, Markus Scheuermaier. “It will also deliver significant benefits to the small, and medium-sized businesses that are crucial to creating jobs, underscoring the vital role the private sector will play in PNG’s recovery.”

It’s expected that attracting the private sector to these remote areas will require an innovative approach. Of PPL’s 17 remote micro-grid centers, most use diesel, which studies show is not only expensive, but prone to price fluctuations and is highly polluting, damaging the environment and exposing people to adverse health outcomes.

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