Trojan BATTERY COMPANY

Case Study
Rural Electrification

Houses on Isla Bella Vista, Ecuador

"Having access to a radio helps us to listen to what happens in our country."

"Our new experiences have made us very happy and allowed us to see that there are many other situations, which helps us to develop as human beings."

Quote from community members

Isla Bella Vista

Isla Bella Vista, a beautiful island off the coast of Ecuador

System specifications:

- **Solar modules: SolarWorld 150W PV modules**
- **Batteries: J185P* Trojan batteries**
- **Inverter: 450W 12V Xantrex**
- **Charge Controller : Morningstar 10A**
- **Racking: pole-mount with galvanized steel**
- **Installation company: AV Renewable Energy S.A.**

More than 250 people live on Isla Bella Vista, a beautiful island off the coast of Ecuador. Most residents make a living fishing or working at the port and no one on the island has access to gird electricity. While one or two houses on Isla Bella Vista may currently have access to a car battery that charges a light bulb, most houses see by candlelight or a small fire at night. There is no cell phone reception on the island and radio is used for offshore communication.

In September 2010, AV Renewable Energy S.A., one of the largest companies in Ecuador offering renewable energy solutions, was hired by the Ecuadoran Ministry of Energy to bring electricity to the homes on Isla Bella Vista. The project is part of a rural electrification initiative in the Gulf of Guayaquil that, once completed, will provide solar electricity to more than 500 homes on the islands.

"There are 40 houses on Bella Vista; it's probably the poorest sector that we worked on in this project," says Ivan Vargas, international manager for AV Renewable Energy S.A. "The government-funded

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Solar home system on Isla Bella Vista

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project is intended to improve the standard of living for the residents. There are many things we take for granted about electricity, but on Isla Bella Vista, for people to have a television running in their own house is incredible."

Each of the 40 houses on Isla Bella Vista received a 150W – 300W pole-mounted photovoltaic (PV) system. The PV modules are mounted to a galvanized steel post with a concrete base, wired through a 10-amp Morning Star charge controller, and charge one 12-volt, deep-cycle J185P 205Ah Trojan battery. The DC electricity from the battery is then converted to AC electricity by a 12-volt, 450-watt Xantrex inverter. The system powers three 20-watt compact fluorescent light bulbs, a fan and a radio/television unit donated to the families by AV Renewable Energy S.A.

Based in Ecuador, AV Renewable Energy S.A. makes it a point to only use materials made in the United States. "We believe in American-made products," Ivan explains. The first step in the project was to figure out which battery to use and the deep cycle Trojan battery provided the exact characteristics needed. "The batteries are performing well and the homeowners haven't had any problems at all with them", he says.

Trojan batteries are 97% recyclable but there is no official recycling program in Ecuador so AV Renewable Energy S.A. set up a program where a local battery company will collect and pay a value for the batteries at the end of their life. The funds from this program will encourage residents to recycle their batteries and will also help residents purchase new batteries.

One of the most challenging aspects of the project was the logistics of getting the solar equipment from the mainland to the island. The only way to get to these islands is by boat and bringing the solar equipment to the island was hard because many trips back and forth were required. Due to the secluded nature of the island, security was a concern and AV Renewable Energy S.A. hired private security staff to guard the system components during the installation.

The residents of Isla Bella Vista received a basic training about how the PV system works and how to maintain the system. These small off-grid systems do not require much maintenance, but AV Renewable Energy S.A. is available to resolve any larger issues that may occur over time.

* The J185P battery has transitioned to the Solar Signature SSIG 12 230 battery.

For more information contact:

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