



"TROJAN'S EXPERTISE IN AGM BATTERY TECHNOLOGY ENABLES CIME TO CONFIDENTLY DESIGN GILAT VSAT NETWORKS TO SERVICE THE RESIDENTS IN PERU. TROJAN'S DEEP-CYCLE BATTERIES PROVIDE IDEAL ENERGY STORAGE SOLUTIONS FOR VSATs OPERATING IN THESE ISOLATED REGIONS."

- Hugo Rojas Espinoza, Engineering  
CIME S.A.

## **Rural Telecom**

central region of Peru

### **System specifications:**

- **Solar modules:** SolarWorld 85W PV modules
- **Batteries:** Trojan deep-cycle 24-AGM batteries
- **Inverter:** Victron Phoenix 12V inverter
- **Charge Controller:** Steca charge controller
- **Racking:** Mounted to tower
- **System Integrator:** CIME Comercial S.A.

While cell phone coverage is rapidly increasing around the world, there are still many places where no cell phone reception is available, leaving people without a reliable means of communication. This lack of coverage contributes to the digital divide, making it harder for people in rural areas without access to communications and technology to gain job skills, stay informed and communicate with people in other areas on a regular basis.

In 2010, the government of Peru launched an initiative called "FITEL 10 (Fondo de Inversion en Telecomunicaciones) Proyecto Banda Ancha para VRAE y Comunidades de Camisea – Lurín" to help bridge the digital divide and encourage social and economic development in rural areas by bringing communication

technology to places where the electric grid does not reach. The initiative includes building and repairing broadband satellite communications networks featuring Gilat Satellite Networks Ltd.'s Very Small Aperture Terminals (VSAT), installing thousands of public phones, establishing Internet centers, and making television and radio more available via satellite to people around the country. Gilat is a premier global provider at the forefront of VSAT technology.

A key part of this initiative was bringing telecom VSAT networks to rural areas of the country to give residents reliable cell phone coverage. The project was financed by the Ministry of Transportation and Communications in Peru through the FITEL initiative. CIME Comercial S.A. was hired to design a standalone photovoltaic (PV) battery-based, solar-powered solution for the local telecom VSAT network, owned and operated by Gilat.

CIME Comercial S.A. has more than 20 years of experience as a leader in the Peruvian marketplace specializing in integrating technology solutions such as quality energy systems, solar energy, air conditioning, electronic security, telecommunications and structured cabling. They also manufacture metal cabinets and structures used for telecom, information, electricity, mining and industrial projects as well as "smart buildings."

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CIME designed a battery-based, solar-powered system for 35 off-grid rural telecom networks owned by Gilat and located around Peru. Each standalone PV system includes three 85Wp SolarWorld modules, one Steca charge controller, one Victron Phoenix 12V inverter and a 12V battery bank of 168 Ah @ C100, consisting of two Trojan deep-cycle 24-AGM batteries connected in parallel. The project was completed in March 2012.

Using a standalone PV energy solution was ideal due to the ease of installation and the reliability of both the sun and Trojan's deep-cycle valve regulated lead acid (VRLA) AGM batteries. The batteries store the energy from the sun so the VSAT can continue to work at night and at times when solar irradiance levels are low. The VSAT has a continuous load which requires them to have access to a consistent supply of energy at all times.

Trojan's VRLA AGM batteries were chosen because they met the project's criteria for amp-hour capacity, physical size, availability, price and required cycle life. Trojan's line of deep-cycle AGM batteries are ideal for renewable energy applications since they are designed for daily cycling and include robust thick plates that extend the batteries' life. Trojan's AGM batteries are low temperature tolerant and have a low internal resistance for higher discharge current and higher charging efficiency.

Maintenance-free VRLA batteries were selected for this project since ongoing system maintenance may be a challenge due to the VSAT's remote locations. Ongoing system maintenance will be performed by Gilat in Peru. Due to advances in battery and solar technology, rural telecom projects have become more feasible allowing companies like Gilat to expand their network, bringing communications to thousands of people in rural areas that would otherwise not have access to reliable communications.



*For more information contact:*

**Trojan Battery Company:**

**[www.trojanbattery.com](http://www.trojanbattery.com)**

**CIME Comercial S.A.**

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