Connecting and illuminating communities for the future

Schneider Electric and Telenetix enriches lives through containerised solar and storage solutions

Telenetix Technology Solutions
South Africa
Containerised solar and storage systems bring access to electricity and technology to communities which were otherwise not capable

Customer Overview

Telenetix Technology Solutions is a turn-key energy systems builder in South Africa that specialises in highly sophisticated containerised systems. They design, manufacture, implement and maintain a variety of Modular Infrastructure Solutions with a primary focus on technology enablement and hybrid power inclusive of solar powered solutions. Telenetix provides leading infrastructure and services using modular containers for anything that you can think of—telecom data centers, power generation with generators, and solar powered community systems.

Solar and storage powering containerised schools, clinics, and police stations

In rural and underserviced areas throughout Southern Africa, where there is no access to the grid, solar powered containerised systems have proved to be a turning point in community improvement and increasing quality of life. The modular infrastructure of these systems are based upon shipping containers, and they are engineered into impressive solar schools, mobile medical and dental clinics, and mobile police stations that provide electricity and immediate access to technology.

The impact of bringing containerised systems into local communities is tremendous. It acts as an enabler of positive social change such as community safety, providing comfortable learning environments, and convenience to local services. For example, a containerised school serves as an education space during the day, but can be used as an information center after hours by parents in the community. Mobile police units are stationed in rural areas to encourage crime reports and to establish local police patrol. Medical and dental procedures can now be performed in rural areas where it may have been unavailable or difficult to access.

Goal

Improve the quality of life and bring reliable access to energy to communities throughout South Africa, by means of containerised systems powered 100% from solar and storage.

Solution

Schneider Electric’s Conext XW+ off-grid DC-coupled system, fully integrated within Telenetix’s highly sophisticated containerised systems.

Application Details

- Containerised schools, medical and dental clinics, and police stations
- 25 solar schools already deployed; 21 mobile police stations deployed by the end of 2016
- 1 - 5kW per container

left: Exterior view of a solar powered containerised school; right: Interior view of a containerised school with adult education taking place
Reliability and self-sufficiency through quality engineering

Given that it is very costly to build a brick and mortar school or fixed buildings in Southern Africa, a complete, multi-functional containerised system can be delivered within four to five weeks. These systems are pre-fabricated and pre-tested in the lab, making them easy to deploy in the field. The standard container form factor also enables easy shipping via road, air, or sea. Many of these containerised solutions are deployed in rural areas where they need to generate their own micro-grid. The workmanship and quality engineering behind these solutions demand sophisticated and self-sufficient energy systems – the heart of which is solar and storage. Each solution is engineered uniquely to the needs of the community, and its modular architecture and rapid deployment cycle makes it very easy to adopt across various applications. Its scalable design features 10’, 20’, or 40’ containers that can pack systems up to 18kW, 36kW, and 100kW respectively. The meticulous details that goes into building these systems ensure that they are highly mobile, cost effective, simple to install, and safe to operate for decades to come.

Schneider Electric Solution

Schneider Electric is proud to complete Telenetix’s turn-key solution with our Conext XW+ off-grid system. It offers an integrated solution with features that are specific to containerised systems:

1. Smart and functional design that simplifies product integration inside a container with limited space, and enables a compact footprint—vertical ventilation allows units to be stacked with zero side clearance and custom BOS simplifies wiring for all system components

2. High efficiency and continuous operation at extreme temperatures that are commonly experienced within containerised systems—peak efficiency of 95.8% and continuous operation up to 40°C (without derating) and continuous operation up to 70°C (with derating)

3. Complete ecosystem of products that is pure plug-and-play—solar MPPT charge controllers, PV inverters, AC and DC BOS, Automatic Generator Start (AGS), Conext Battery Monitor, and remote gateway and data logger

To learn more about the Conext XW+, visit: solar.schneider-electric.com/product/conext-xw-hybrid-inverter

“Schneider Electric offers a product range which is not only flexible to the needs of complex installations, but offers reliability which we require for solutions deployed in harsh environments and remote locations.”

- Johan Wolmarans, Chief Design Engineer, Telenetix