

## The Challenge

At the Orotta hospital, in Asmara, Eritrea, wards such as the children's paediatric cardiac surgery and neonatology are extremely sensitive to power failure. As the Eritrean grid is not stable, the hospital needs to secure the existing electrical installations. Until now, the hospital used a diesel generator as backup but the solar irradiance in Eritrea is very high which makes it extremely favourable for



Phaesun

the use of PV. Therefore, a PV system was chosen to guarantee a reliable power supply for the Orotta hospital in case of power failure.

## System components

<b>Solar modules:</b>	72 ET-M572200, 200 Wp Solar modules
<b>Batteries:</b>	Sonnenschein, 24 Batteries A602 Solar 16 OPzV 2600
<b>Inverter/Chargers:</b>	Studer, 6 Xtender, XTH 8000-48, 230 Vac/50Hz
<b>Solar charge controller:</b>	Studer, 3 VarioTrack, VT-80
<b>Racking:</b>	Mounting frame
<b>Remote communication:</b>	Studer, Xcom-GSM (not yet functional due to local data SIM usage regulation)
<b>Other:</b>	Studer, 1 remote control, RCC-02 Studer, 2 mounting frames X-Connect

PV generator 14,4 kWp, Battery bank 124 kWh storage capacity.

For the power management, components from Studer Innotec are used: three VarioTrack MPPT charge controllers, VT-80, six Xtender inverter/chargers XTH 8000-48 and a remote control guarantee a reliable energy management.

The system, installed by the Phaesun Asmara team, has been financed by the non-profit organisation Archemed which supports public hospitals.

## The Solution

The new backup solar system with priority loads provides two vital hospital wards with secure and uninterruptible power supply. Now a battery bank, which is additionally solar fed with a PV-generator, supplies the most important consumers in the operating theatre and the maternity room without interruption during power blackouts.

The system is designed to provide 60kWh of daily production with the inverter/chargers providing a 42kW peak load. This way, it can provide around seven hours of power during operation daily without grid or diesel generator, and four hours without sun.

## Why Studer

Perfect electronics to guarantee the power supply without interruptions.

## Project outcome

The doctors, nurses and patients at the Orotta hospital are now equipped with a reliable backup solar system to guarantee that there will always be a sufficient energy supply and that there is no risk that lights or medical appliances will shut down during an operation.

## The Company

Phaesun, founded in 2001, believe that the independence created with the help of their solar systems communicates an enhanced feeling of liberty. This in turn will lead to an enhanced quality of life of the individual, particularly with regard to the conditions that are still presumed to be the limits of self-realisation in structurally weak regions of the world.

### For more information please contact:

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