Case Study
Backup System
Asmara, Eritrea

The Challenge
At the Oro/otta 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 the use of PV. Therefore, a PV system was chosen to guarantee a reliable power supply for the Oro/otta hospital in case of power failure.

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

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 Oro/otta 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.

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