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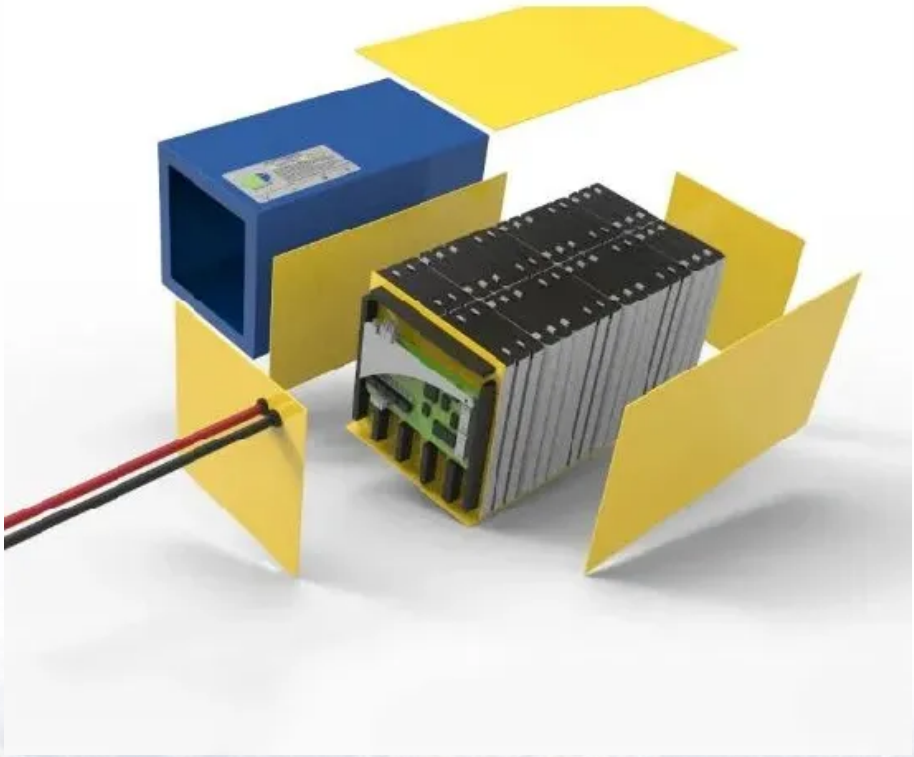
Tunisia communication base station hybrid energy equipment



Overview

Could hybridization improve the quality/cost/environment ratio for off-grid telecommunication base stations?

The hybridization of fossil fuels with renewable energies would make it possible to find a better quality/cost/environment ratio for the supply of off-grid telecommunication base stations (BSs).This paper presents the analyses of eight different hybrid energy systems dedicated for telecommunications equipment with a BS antenna as case study.

What is the techno-economic analysis of hybrid energy system?

The techno-economic analysis of hybrid energy system comprises solar, wind and the existing power supply. All the necessary modelling, simulations, and techno-economic evaluations are carried out using the assessment software package HOMER (Hybrid Optimization Model for Electric Renewable).

What are the different types of hybrid energy systems?

Hybrid installation may or may not always include storage systems. There are many types of hybrid energy systems, they include; Photovoltaic/wind, Photovoltaic/wind/diesel, Photovoltaic/hydraulic, Hydraulic/wind, Biomass, Photovoltaic/wind/biomass, etc.

What is the power of a base station?

Where is the power of the base station, is the load current and is the base station voltage. Power of Base station is equal the load current times base station voltage. Inputting this data in HOMER, we obtained a scaled annual average energy consumption per day of 34kWh/day and a peak load of 3.5kW.

Who designed and installed the power systems for the three mobile operators?

Those power systems were designed and installed by a Greek company

named GERMANOS S.A. The HPS installed for the three mobile operators were consisted of photovoltaic panels, an auxiliary diesel generator, two battery banks, one three-phase two-way inverter and a system controller.

What is hybrid optimization model for electric renewable?

Hybrid optimization model for electric renewable (HOMER), one of the most widely used optimization tool for renewable energy systems was employed to carry out the techno-economic analysis.

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