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Design of wind-solar hybrid power generation system for communication base stations in Northern Cyprus

Overview

This paper presents the solution to utilizing a hybrid of photovoltaic (PV) solar and wind power system with a backup battery bank to provide feasibility and reliable electric power for a specific remote mobile base station located at west arise, Oromia.Can a hybrid solar and wind power system provide reliable electric power?

This paper presents the solution to utilizing a hybrid of photovoltaic (PV) solar and wind power system with a backup battery bank to provide feasibility and reliable electric power for a specific remote mobile base station located at west arise, Oromia.

What is a hybrid wind and solar energy system?

Above being the case, a hybrid wind and solar energy system was developed for the generation of power. The model is a combination of both horizontal axis wind turbine and solar panels where the blades of the wind turbine are being made by PVC pipes and the solar panel tiles are fitted along with the turbine blades.

What is a wind turbine & solar panel system?

The model is a combination of both windmill and solar panels where the blades of the wind turbine are being made by PVC pipes and the solar panel tiles are fitted along with the turbine blades. Moreover, wind turbine can be operated at lower wind speeds thus increasing the efficiency of the total system.

What is a hybrid system?

A hybrid system of wind, solar, and battery backup can be used to offer a dependable and sustainable supply of electricity to resolve this problem. A complete hybrid system having solar, wind and battery system has been discussed in this paper. We also covered the advantages of using hybrid systems at residential level and for remote locations.

What is a wind turbine model?

The model is a combination of both horizontal axis wind turbine and solar panels where the blades of the wind turbine are being made by PVC pipes and the solar panel tiles are fitted along with the turbine blades. The project describes the modelling of two emerging electricity systems based on renewable energy: photovoltaic and wind power.

Why was a prototype wind turbine built for this study?

Conclusion and Scope The prototype of wind turbine was built for this study to satisfy the energy requirements on the houses. This prototype was tested along with PV panels to verify the power output and the efficiency of the total arrangement.

Design of wind-solar hybrid power generation system for communic

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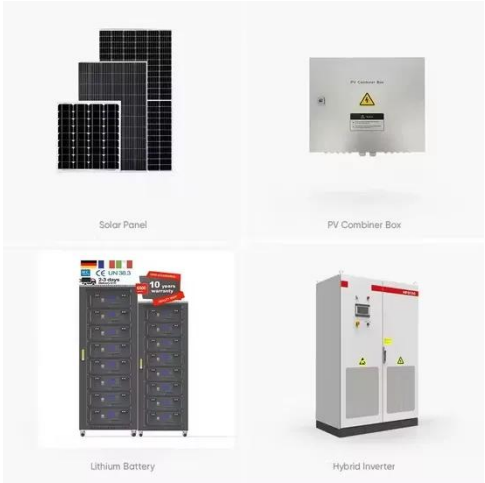

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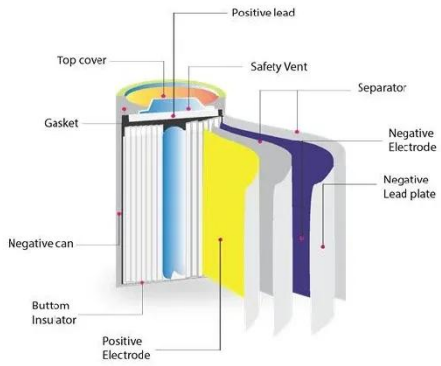

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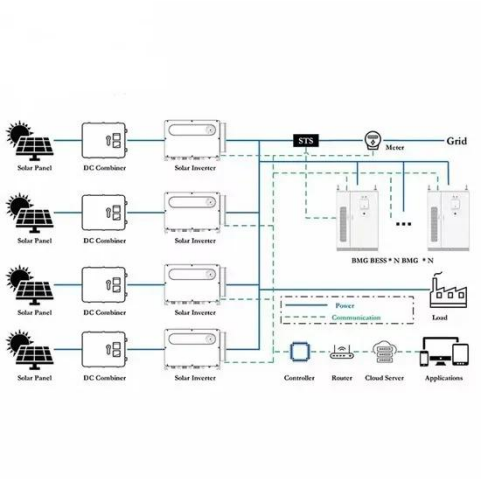

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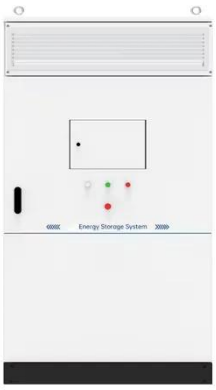

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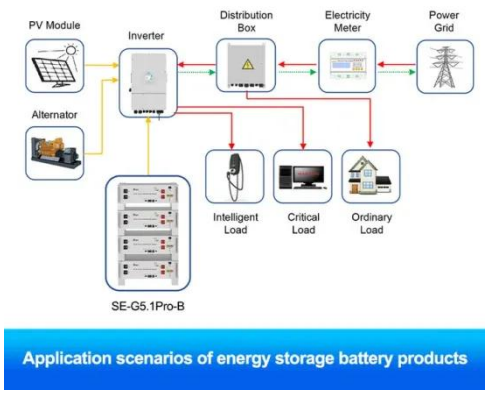

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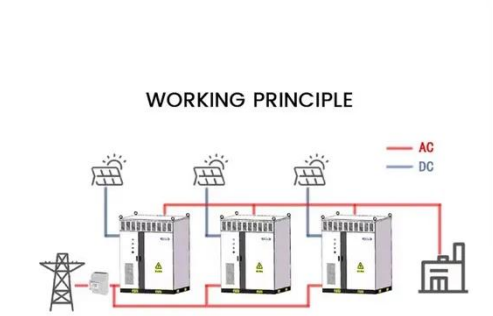

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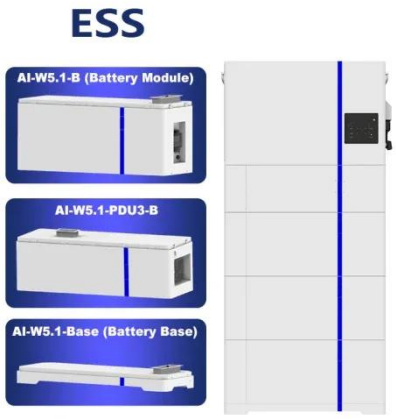

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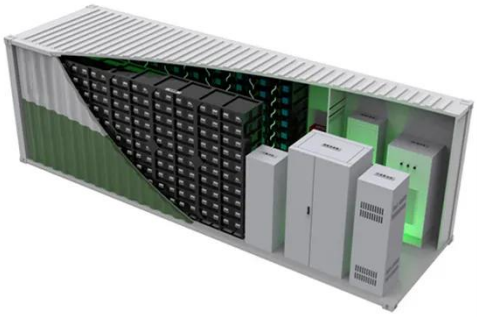

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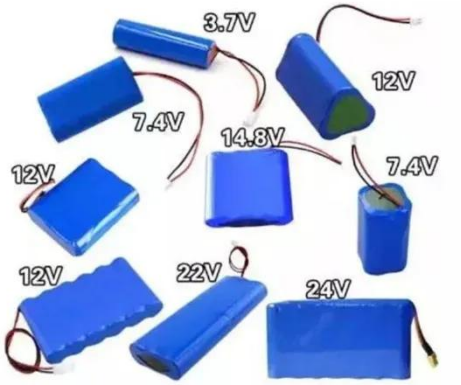

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