

## Kongres Container

# Indonesia s public construction communication base station hybrid energy



## Overview

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The collaboration aims to power Telkom's Base Transceiver Stations (BTS) with a combination of wind and solar energy, significantly reducing carbon emissions and promoting environmental sustainability. Why is telecommunications infrastructure important in Indonesia?

Introduction In the age of digital transformation, telecommunications infrastructure is the backbone of Indonesia's connectivity. As the nation's leading telecommunications provider, Telkom Group is committed to sustainability and operational efficiency.

What is a hybrid energy storage system?

Hybrid energy storage systems using battery energy storage has evolved tremendously for the past two decades especially in the area of car manufacturing either in a fully hybrid electric car or hybrid car that use battery energy storage with internal petrol combustion engine .

How much power does a base station use?

Suppose the load power consumption of a base station is 2000 W by using the lithium-ion battery and the corresponding load current is approximately 41.67A (for simplification, here the 2000W power consumption includes the power consumption of the temperature control equipment divided by 48V per battery module).

What is unique about this research based on hybrid energy storage?

The interesting or unique about this research compared to other research-based on hybrid energy storage is to apply hybrid energy storage in the poor grid and bad grid scenarios which are not discussed in another research before.

How many power conversion modules should a base station have?

The sum of the load current of the base station is at 6667 W and the rectifier

efficiency is at 96% where the capacity required is 6944 W. The capacity of a single AC/DC power conversion module is 3000 W, and thus two power conversion modules should be configured.

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