

Hybrid type of energy storage container for sports stadiums





Overview

Why do sports stadiums need a photovoltaic system?

Recent advancements in renewable energy technologies have further strengthened the case for their integration into sporting stadiums . The efficiency and cost effectiveness of photovoltaic (PV) systems have improved over time making them a practical choice, for generating energy on a large scale .

How much energy does a stadium use?

Production and Consumption Summary Stadiums in Abidjan require an average daily energy consumption of 48,158 kWh, with a peak demand of 9392 kW (Figure 6). Figure 14 presents the proposed system which addresses the electrical load requirements of the stadiums through various generation sources.

What are the economic benefits of a hybrid energy system?

Abidjan achieves 20.1% renewable energy penetration, while San Pedro reaches 69.9%. The proposed hybrid renewable energy systems offer substantial economic benefits, including payback periods of less than 2 years and high internal rates of return (IRR), with surplus energy generated in some locations potentially sold back to the grid.

Can solar and wind energy be used in stadiums?

This study highlights the feasibility and benefits of integrating solar and wind renewable energy systems into the energy supply of stadiums in five Ivorian cities. The results demonstrate a significant reduction in grid dependency, with renewable energy contributions ranging from 20.1% in Abidjan to 69.9% in San Pedro.



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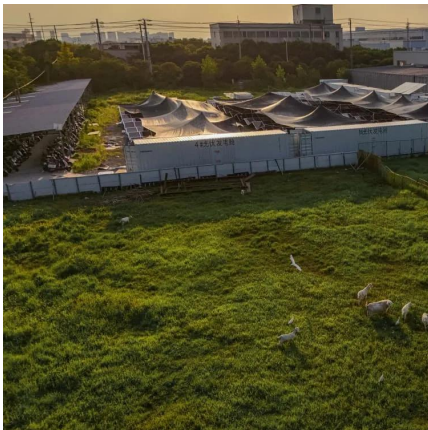


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