

# **Wind-resistant photovoltaic container for sports stadiums**





## Overview

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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 .

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.

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.

Will 370 kW of PV & 3500 kW wind power a stadium in Abidjan?

This study proposes integrating 370 kW of PV and 3500 kW of wind generation capacity for stadiums in Abidjan. This adjustment would result in a reduction of operating costs to \$4.55 million per year. The investment is projected to have a payback period of 1.03 years and an IRR of 97.3%.



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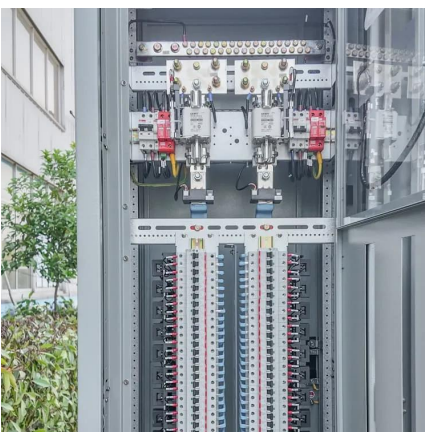
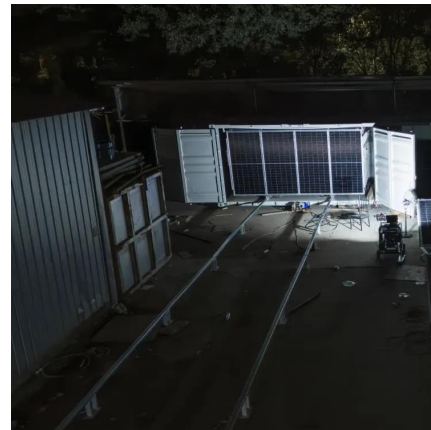


### Identifying challenges, benefits, and recommendations for ...

Mar 1, 2025 · Our finding revealed the challenges: economic and social challenges, the structure of the stadiums, policy and regulations, and the technical aspect. We also presented many ...

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