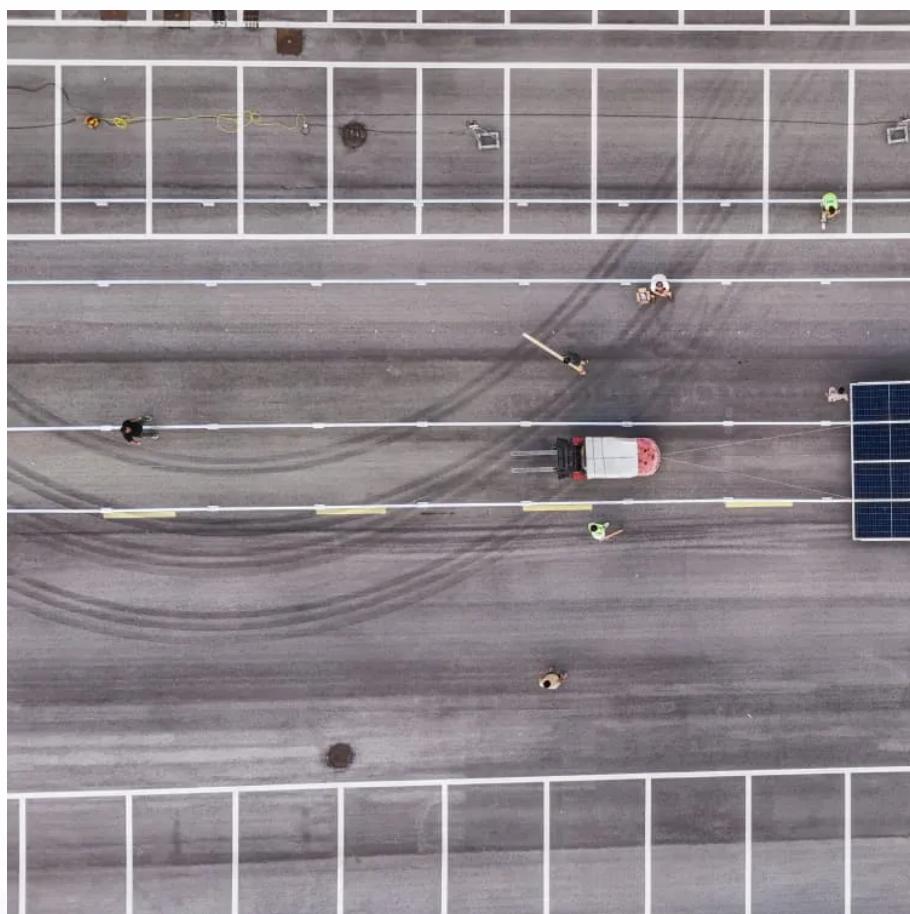




FTMRS SOLAR

Wind-solar hybrid solar air conditioning





Overview

Air conditioners usages in the homes and offices are the top drivers of global electricity demand for the next three decades. This work proposes an innovative grid-independent, hybrid wind-solar air conditioni.

What is a hybrid solar wind air-conditioning system?

This proposed hybrid solar wind air-conditioning system is designed with a new involute VAWT model. In the electrical design calculations, the major components are hybrid energy resources, charge controllers, batteries, and breaker switches. This practical model uses a 0.3 ton car air conditioner model for demonstration.

Can a hybrid energy wind-solar system be operated autonomously?

The hybrid energy wind-solar system proposed in this work may also be operated in the fuzzy based home autonomous mode [34, 35] with 2.2 kW active power without storing energy in the batteries employing a fuzzy-based intelligent control system for the efficient use of hybrid energy to be independent of the supply grid.

Can a hybrid solar energy system run electrical appliances and air-conditioning?

A hybrid combination of wind-solar energy with rated 4 kW power may be sufficient to run electrical appliances and air-conditioning load in a home environment. This analysis considers the random incidence of wind speed and good availability of solar irradiance in the proposed location .

Can wind-solar air conditioners meet future energy demand?

Air conditioners usages in the homes and offices are the top drivers of global electricity demand for the next three decades. This work proposes an innovative grid-independent, hybrid wind-solar air conditioning model to meet future room cooling demand. This model has 0.3 ton capacity, and it is operated with 1.5 kW, 48 V, BLDC motor drive system.



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(PDF) Journal of Modern Computing and Engineering ...

Jan 3, 2025 · This paper presents the recent studies on hybrid air conditioning systems. Additionally, the fundamental vapour compression system and components involved within the ...

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