

Smart Greenhouse Solar Energy Import System





Overview

Does solar energy contribute to a sustainable greenhouse?

The solar energy contribution was included in the overall economic analysis that include a comparative study between using a regular traditionally operated green house for the same dimensions and the smart sustainable greenhouses with two control mechanisms. 4. Results and discussion 4.1. Energy requirements for the greenhouse 4.1.1.

How much does a smart sustainable greenhouse cost?

The total required investment for one full scale smart sustainable greenhouse is approximately QAR 407,000, and the annual operating cost is QAR 12060 which is considered relatively low due to the income generated from the PV system and the free energy used from this system in the greenhouse. Table 14.

What is smart sustainable greenhouse concept model (ssghcm)?

A smart sustainable greenhouse concept model (SSGHCM) was built to demonstrate the effectiveness and the profitability of using renewable energy and smart control systems in closed agriculture environment. SSGHCM is powered by solar photovoltaic energy and utilizes waste water management.

Can IoT smart solutions be used for a smart greenhouse?

DEVS modelling of IoT smart solutions for the smart greenhouse is a promising way to ensure efficient management of the greenhouse environment while minimizing energy consumption. The proposed model integrates components dedicated to sensing, prediction, optimization, and control along with the learning modules for the predictor and the optimizer.



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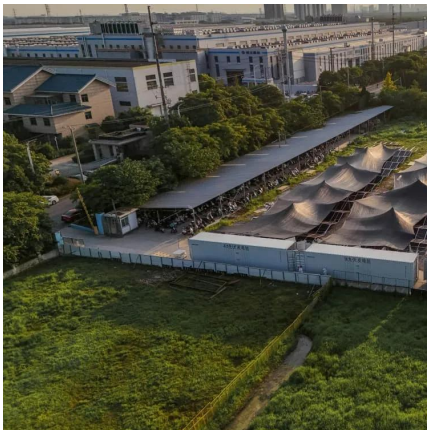


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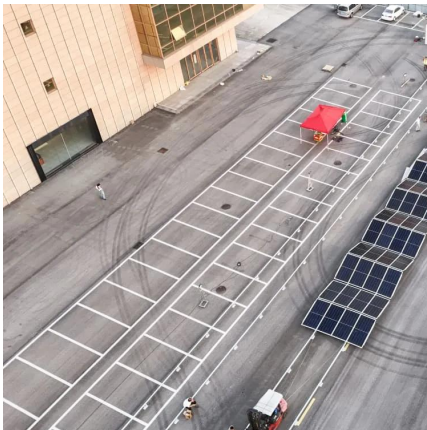
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