

Dili solar Container Farming



SMART GRID & HOME



Overview

Are container farms a sustainable food production system?

Container farms in colder areas show greater energy-saving potential. Container farms (CFs), integrating plant factories into mobile prefabricated buildings, are emerging as a novel decentralized food production system to fortify sustainable urban development. However, the high energy demand needs to be optimized to promote wider CF application.

Are container farms energy efficient?

The energy efficiency of container farms, a novel production system, is studied. Crop loads related to daily growth are factored in building energy modeling. 2 active and 2 passive energy-saving strategies are assessed under 8 climates. Container farms in colder areas show greater energy-saving potential.

What is a container farm?

Container farms (CFs) are a moveable type of plant factories that are housed within retrofitted metal shipping containers (Liebman-Pelaez et al., 2021; Jordan, 2023). Due to their specific structure, CFs present unique advantages over other CEA applications. The primary advantage is easy transportation.

How to develop a plant energy sub-model?

First, the plant energy sub-model was developed by four steps: programming the mathematical model (Section 2.1) in Python, obtaining unknown variables through crop growth experiments (Section 2.2), processing experimental data (Section 3.1) and feeding dynamic plant loads into EnergyPlus (Section 2.3.2).

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