

# High-efficiency Thai photovoltaic containers for agricultural irrigation





## Overview

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Can photovoltaic power be used for high-efficiency irrigation systems?

Due to weather and solar irradiation, photovoltaic power generation is difficult for high-efficiency irrigation systems. As a result, more precise photovoltaic output calculations could improve solar power systems. Customers should benefit from increased power plant versatility and high-quality electricity.

Can a 15 kW photovoltaic system be integrated with a high-efficiency irrigation system?

Figure 1 depicts the diagram of the proposed system. The basic architecture of the proposed system. This study involved the utilization of a 15 kW photovoltaic (PV) system integrated with a high-efficiency irrigation system. A dataset was collected and analyzed to assess the system's performance.

How can agrivoltaics benefit Thailand?

For Thailand—a nation with abundant sunlight and a strong agricultural base—agrivoltaics offers a pathway to sustainable development. Farmers gain additional income through solar energy sales or reduced electricity costs. Leasing land for solar installations provides financial stability, especially in regions with low agricultural yields.

What are the challenges faced by agrivoltaics in Thailand?

While Thailand has policies supporting renewable energy (e.g., the Alternative Energy Development Plan) and sustainable agriculture, agrivoltaics lacks a dedicated regulatory framework. Key challenges include: Land Use Conflicts: Agricultural land zoning prohibits non-farming activities without permits.



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