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Design Considerations of Agrophotovoltaics Systems

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Abstract: *This project explores the integration of solar energy and traditional agriculture through the design considerations of Agro photovoltaic (APV) systems. The focus lies in optimizing the coexistence of solar panels and agricultural activities, with solar plates inclined up to 30 degrees and positioned 10 feet above ground level. The primary objective is to harmonize energy generation and crop cultivation, ensuring dual land use efficiency. By adjusting the inclination angle, the project aims to maximize solar energy capture throughout the day, while elevating solar panels facilitates conventional farming practices underneath. Significant advantages include dual land utilization, sustainable energy generation, and potential crop yield enhancements. However, challenges such as initial costs and maintenance complexities require careful consideration. This research contributes insights into the design parameters critical for successful APV system implementation. As the world seeks sustainable solutions, this project serves as a stepping stone towards a future where renewable energy and agriculture seamlessly coexist for a more resilient and environmentally friendly global landscape.*

Keywords: Agrophotovoltaic systems, Solar energy integration, agriculture, Renewable energy

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