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Load Management of a Shared Solar Energy System for Three Adjacent Consumers

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Abstract

This project focuses on the design and implementation of a shared hybrid solar energy system for three neighboring homes in Hebron, Palestine. The system aims to minimize monthly electricity bill, reduce dependency on the traditional grid, and lower energy costs. By combining photovoltaic panels, grid connection, and smart load management using MATLAB simulations, the project ensures efficient energy distribution and prioritization based on seasonal consumption patterns. The system demonstrates the feasibility and benefits of community-shared solar power as a sustainable and cost-effective alternative for residential energy needs.