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# Solar Powered Seed Sowing Machine

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**Abstract:** *The solar-powered seed sowing machine is an innovative agricultural device developed to automate and optimize the seed sowing process using renewable energy. The system integrates a photovoltaic panel that powers a motor-driven seed metering and furrow-opening mechanism, ensuring accurate seed depth and spacing. By harnessing solar power, the machine eliminates the need for fuel-based engines and reduces operational costs. Its design focuses on portability, user convenience, and reliability, making it suitable for small and medium-scale farming. The machine reduces manual labour, enhances sowing precision, and improves overall crop quality by ensuring uniform seed distribution. Additionally, the solar-powered operation promotes environmental sustainability and supports the transition toward clean energy in agriculture. The project aims to provide a low-cost, efficient, and eco-friendly alternative to traditional seed sowing methods.*

**Keywords**: Ultracapacitor-Integrated Solar Seed Sowing System, Moisture-Based Automated Sowing Technology, Water-Assisted Precision Agriculture Mechanism, Renewable Energy–Driven Smart Farming Equipment



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