

"One Roof, Double Savings: 5 kW & 3 kW Solar Systems for Rental and Residential Use"

Location: Kacherippady, Ernakulam, Kerala, India



AT A GLANCE

Challenges

- Operational Challenge : Shifting materials in a three-story building.
- Financial Challenge : Extensive loan procedures for the 3 kW system, with payment contingent on loan approval.
- Cost Management : Managing costs associated with two separate connections, including initial setup, ongoing utility bills, and potential fees for upgrades or maintenance.

Solutions

- Solved material shifting issues by hiring more workers.
- Provided a support team to assist with loan procedures.
- Developed a plan to streamline material delivery and installation processes.
- Established a contingency plan to handle potential delays in loan approval and avoid project halts.

TECHNICAL SPECIFICATION

- System Capacity: 5 KW , 3 KW
- Technology Used: Sofar String Inverters, Waaree 540wp DCR bifacial (16 mos)

INTRODUCTION

Stergy Cleantech Pvt. Ltd., a leading solar energy company, successfully implemented an 8 kW grid-tied solar PV system in Kerala. The customer's decision to invest in solar energy reflects the growing awareness and acceptance of renewable energy solutions in the region. By installing a combination of 5 kW and 3 kW systems, Stergy Cleantech Pvt. Ltd. provided a tailored solution that maximizes energy production and efficiency, meeting the specific energy needs of the household. This project serves as a model for other residential installations, showcasing the expertise of Stergy Cleantech Pvt. Ltd. in delivering high-quality, customized solar energy solutions

COMPANY OVERVIEW

Company Name: Stergy Cleantech Pvt. Ltd

Established: 2017

Location: Kochi, Kerala

Services: Solar EPC

PROJECT INITIATION

Year: 2024

Type of System: Grid-tied residential solar PV system

Capacity: 8 kW

Implementing Agency: Stergy Cleantech Pvt Ltd

OBJECTIVE

1. Reduce electricity costs for both the main residence and the rented house.
2. Promote sustainable energy use and increase the property's value.
3. Develop strategies for shifting materials in a three-story building to minimize delays and enhance productivity.
4. Implement cost-effective measures and efficient resource allocation to keep the project within budget.
5. Maintain transparent communication and provide regular updates to stakeholders to build trust and ensure satisfaction with the project's progress.

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Outcome

- Overcame material shifting challenges in the building.
- Ensured timely loan approval and payment processing.
- Achieved streamlined project execution through careful planning and resource management.
- Enhanced property value due to the solar installation.
- CO2 Emissions Reduction:
- Annual CO2 emissions reduction: Approximately 6 tons.
- Equivalent to planting over 150 trees per year.

CONCLUSION

This case study demonstrates the successful execution of a solar project involving two distinct electrical connections in a three-story building. The project team effectively balanced the 5 kW residential connection funded through personal investment and the 3 kW rented house connection financed by a loan. Strategies such as hiring additional workforce and leveraging a dedicated loan support team ensured smooth progress and timely completion. The project outcomes highlight the importance of strategic planning, problem-solving, and clear stakeholder communication in achieving reliable electrical supply, cost savings, and stakeholder satisfaction.

IMPLEMENTATION DETAILS

- System Design: A combined 8 kW grid-tied system with 16 high-efficiency
- Mono-Perc Half cut solar panels and inverters.
- Site Assessment: Comprehensive analysis including solar irradiance and shading assessment to ensure optimal panel placement.
- Installation Process: All components installed as per system design
- Permitting and Approvals: Obtained necessary permits from local authorities and complied with state regulations.
- Net Metering Integration: Systems were connected to the local grid with net metering to allow excess energy to be fed back into the grid.
- Electricity Connection :
 - 5 kW residential connection for the main house.
 - 3 kW connection for the rented house.
- Infrastructure:
 - Single-phase meter box.
 - AC-DB, DC-DB mount.
 - Three earthing systems (AC Earth, DC Earth, Lightning Arrester Earth).

FINANCIAL MODEL

1.Subsidies:

- 5 kW System: Installation cost reduced by 26% due to government subsidies.
- 3 kW System: Installation cost reduced by 43.33% due to government subsidies

2.Loans: Samriddhi Loan at a 7% interest rate for the 3 kW system through a digital application process..

3.Net Metering: Homeowners can sell excess power back to the grid, providing an additional source of income.

4.Investment :The Customer made a personal investment for the 5kw connection