

**Shikshan Prasarak Sanstha's,
Padmabhushan Vasantodada Patil Mahavidyalay,
Kavathe mahankal**

Department of Physics

Field Work

(2025-26)

Vishwanath Solar Energy Plant Boragaon

Date: 04 March 2026

Mrs.Mahamuni P.U.

H.O.D. Physics P.V.P. Mahavidyalay Kavathemahankal

Teacher In charge:

Patil Suresh Tukaram

Patil Pranali Shrikant

Objective of the Visit :-

The objective of the field visit was to understand:

- The practical working of a solar photovoltaic (PV) power plant
- Major components and their functions
- Power generation and grid integration process
- Maintenance and operational challenges

Major Components Observed :-

1. Solar Panels (PV Modules) ,Made of silicon photovoltaic cells, Installed in large arrays facing south at an optimal tilt angle, Convert sunlight directly into DC electricity.
2. Mounting Structures, Galvanized steel structures fixed to the ground, Designed to withstand wind and weather conditions.
3. Inverters, Convert DC power into AC power, Equipped with safety protection systems, Connected to monitoring software.
4. Transformer Yard, Steps up voltage level for grid transmission, Includes switchgear and protection devices.



5. Control Room & Monitoring System -

1. Sunlight falls on solar panels.
2. PV cells convert sunlight into DC electricity.
3. DC power flows to inverters.

4. Inverters convert DC into AC.
5. Transformer increases voltage.
6. Electricity is supplied to the grid.



Technical Observations :-

- Installed Capacity: 10 MW
- Number of Panels: ~30,000
- Panel Rating: 335 W each
- Land Area: ~40–50 acres
- Average Daily Generation: 40,000–50,000 kWh
- Efficiency: 15–22%



Maintenance Practices Observed :-

- Regular cleaning of solar panels to remove dust.
- Periodic inspection of wiring and connectors.
- Thermal scanning for hotspot detection.
- Preventive maintenance schedule followed strictly.

Advantages of the Plant:-

- Produces clean and renewable energy
- Reduces carbon emissions
- Low operational cost after installation
- Supports rural electrification

Challenges Observed :-

- High initial installation cost
- Large land requirement
- Power generation depends on weather conditions
- Dust accumulation reduces efficiency



Outcomes from the Visit :-

- Practical understanding of solar PV system operation
- Knowledge of grid integration process
- Familiarity with plant safety standards
- Understanding of renewable energy benefits

Conclusion:-

The field visit to the solar power plant provided valuable insights into renewable energy generation and the practical implementation of photovoltaic systems. It enhanced our understanding of sustainable energy technologies and their role in reducing dependence on fossil fuels. Solar energy is a promising solution for future power needs and plays a vital role in achieving environmental sustainability.



Department Physics

Head of Department,
Department of Physics
P.V.P. Mahavidyalaya, K. Mahankal,
Dist. Sangli, Maharashtra 416405
Date: 26/10/2025
02/12/2026

To,
The Principal,
Padmabhushan Vasanttraodada Patil Mahavidyalaya,
Kavathe Mahankal, Dist. Sangli,
Maharashtra 416405

Subject: **Permission for "field visit"...**

Respected Sir,

The department of Physics of Our College is going to organize Field visit for the students of B.Sc.III to Solar Energy Plant at Boragaon. It will be conducted on the date of 04/03/2026. This Field visit is the part of University syllabus.

It is a humble request to give us permission for this Field visit

Thanking You.....

Granted.
My
26/12/2026

Participated Faculty Member

- 1) Mr.Suresh T. Patil
- 2) Ms.Pranali S.Patil

Habamr
Yours faithfully
Head
Department of Physics
P.V.P. Mahavidyalaya
Kavathe Mahankal Dist-Sangli



शिक्षण प्रसारक संस्थेचे,

पद्मभूषण वसंतरावदादा पाटील महाविद्यालय, कवठे महाकाळ

प्राध्यापक - प्रा.डॉ.जी. डी. कोरे

ई मेल-kmpvp@rediffmail.com

मोबा .9421183588

संकेतस्थळ :www.pvpkm.org

Date: 28/02/2028 .

To,

The Manager,

Vishwanath Projects Ltd.


Boragaon.

Sub. : Permission for "Visit to Solar Plant"

Respected Sir,

The students of B.Sc.III of the Department of Physics would like to visit your company's solar plant as a part of their study project. I kindly request you to grant the students access to the solar plant so they may learn more about it and how it operates.

Thanking You,


Yours faithfully,

Acting Principal

Padmabhushan Vasanturadada Patil
Mahavidyalaya, K. Mahankal Dist. Sant



md. S.ikandar.

Shikshan Prasarak Sanstha's
P.V.P. Mahavidyalaya, Kavathemahankal
Department of Physics

List of student

B.Sc. III 2025-2026

FIELD VISIT

Date: 04/03/2020.

Sr.no.	Student name	Address	Mobile number
1.	Padalkar Sonali B	Ghorpadi	935672164
2.	Chavan Sakshi Suresh	Dhalewadi	9226542365
3.	Salunkhe Riya Ravasaheb	Dhalewadi	9579107050
4.	Shinde Kiran Sampatrao	Ghatnandre	89753810
5.	Ghodake pooja Govind	Chorochoi	8010139875
6.	Bhosale Prajakta Hanamant	Borgaon	7030191907
7.	Daingade Sanika Dashrath	Jambhulwadi	9309023404
8.	Chavan Anuradha Ramchandra	Langarpeth	8378827865
9.	Priyanka Sarvade	Nagaj	97644342297
10.	Aayesha Nisar Tamboli	Dhalgaon	963635454
11.	Laxmi Karande	V. wadi	8149511636
12.	Rohit Bhosale	Kidebisarj	7276089518

Padalkar

Chavan

Shinde

Ghodake

S.D.D

A.R.C

Phs

L. Karande

Bhosale

H. K. Kulkarni
Head

Department of Physics
P.V.P. Mahavidyalaya
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Edit with WPS Office