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Sahakar Maharshi Shankarrao Mohite~Patil  
Institute of Technology & Research**

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An ISO 9001:2015 & 21001:2018 Certified, District Green Champion Awardee, MNGRE, Govt. of India

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Accreditation : NAAC, NBA  
Awards : CEGR (2021), Education Excellence (2020), National Education Leadership (2014)  
Ranking : NIRF, HC (3.3)  
Membership : ISTE, NDLI, DELNET, ELTAI.

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## DEPARTMENT OF ELECTRICAL ENGINEERING

# Industrial Visit Report

**16<sup>th</sup> Feb, 2024**  
**At**  
**Wind Farm, Taraswadi**



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## ACKNOWLEDGEMENT

We are gladly & thankful to Director as well as Principal, Dr.P.A.Dhawale and Head of the Departments Prof. S.S.Kambale and our faculties who give us a great guidance regarding training and instruct us the importance of training in electrical field. So we decided to take visit Wind Farm at Taraswadi.

We are especially thankful to the in-charge Mr. Sushant Patil and other engineers of Wind Farm, Taraswadi who gave the proper guidance to students and gave practical based approach learning to students.

## GENERAL INFORMATION

Wind power is extracted from air flow using wind turbines or sails to produce mechanical or electrical power. Wind turbines convert the kinetic energy in the wind into mechanical power. This mechanical power can be used for specific tasks (such as grinding grain or pumping water) or a generator can convert this mechanical power into electricity to power homes, businesses, schools, and the like.

The development of wind power in India began in the 1990s, and has significantly increased in the last few years. Although a relative newcomer to the wind industry compared with Denmark or the United States, India has the fifth largest installed wind power capacity in the world. In 2009-10 India's growth rate was highest among the other top four countries.

Maharashtra government's focus on tapping renewable energy has led to sharp rise in the capacity to generate power using wind energy in the last few years. According to official data, wind power generations capacity in the state has increased a staggering ten times in just six years. As per C-WET data, the total installed capacity in Maharashtra stood at 3093 MW

Taraswadi is one of potential wind farm site in Maharashtra which installed capacity is 2.8MW.

## PURPOSE OF VISIT

Our main purpose for this visit is to be familiar with industrial environment and to get practical knowledge of electrical power generation through Renewable Energy source

Students of 4<sup>th</sup> semester will get the idea of electrical power generation, Transmission and distribution. Students will also get familiar with Wind Mill, Wind Turbine and its parts



## WHAT WE LEARN?

On 16<sup>th</sup> Feb, 2024 (Friday) at 10:30 am we reached at Taraswadi Wind Farm.

### Introduction About Wind Mill and Power Generation

At the beginning, In charge of the Taraswadi wind farm explained about the wind mill installed at Taraswadi and their generation, transmission and distribution



#### ➤ **Key Points:-**

##### **1. How Electricity is generated:**

The wind direction rotates the wind turbine to face into the wind. The energy in the wind (called kinetic energy) turns the turbine blades around the rotor (creating mechanical energy).

The rotor connects to the main shaft, which turns inside the generator housing. Here, a magnetic rotor spins inside loops of cooper wire. The electricity generated then travels down large cables from the nacelle, through the tower, and into an underground cable. At wind farms, cables from different turbines take the electricity generated to a substation. Here, a step-up transformer again increases the electrical output.

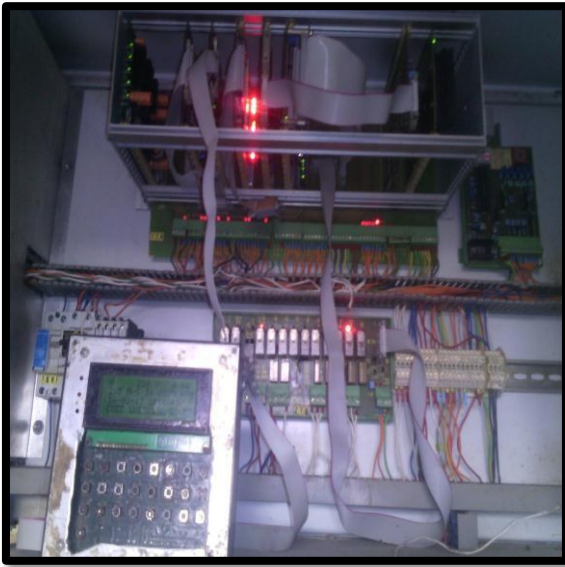
A transmission line connects the electricity output at the substation to the electrical grid serving communities throughout the region

## 2. Types of Generator Used:

- (i) Single winding: It is run on 1000 rpm
- (ii) Double Winding: It is run on 750 rpm

## 3. Wind Mill Capacity:

- Capacity of wind mill 250Kw
- Height of the wind mill is 30 meter



## CONCLUSION

From this visit, we got the information and practical knowledge about Power Generation through wind mill and transmission and distribution of power. Student got the knowledge about wind mill, wind turbine, generator. They got the idea how electricity is generated through wind mill and types of generator and their connection and from the control panel how to take reading and how to manually stop wind mill. About **35 students** of Electrical Engineering of SMSMPITR Engineering College, Akluj & Three faculty members named Prof. S.S.Kambale and Prof. S.S.Chaugule Prof.P.G.Phule were benefited from this visit as they got chance to discussion with In-charge officer and other engineers working at wind farm.



Visit In charge

HOD

Principal

