



REPORT

INDUSTRIAL VISIT TO ADANI THERMAL POWER STATION, DAHANU

Event Name	Industrial Visit
Coordinators (ADTPS)	Mr. Naresh Chiluka
Venue	Thermal Power Station, Dahanu
Date and Time	20/03/2026 To 21/03/2026 09:00 AM ONWARD
Department	CIVIL & MECHANICAL
Total numbers of participants	55 STUDENTS + 4 FACULTY
Faculty Member accompanying students	Dr. Santosh Wankhade & Prof. Nitin S. Shelar

Introduction

An industrial visit was organized by the Department of **Civil** and **Mechanical** Engineering, **Yadavrao Tasgaonkar Institute of Engineering and Technology**, Karjat, to the Adani Power Plant, Dahanu, for all year students. The Adani Dahanu Thermal Power Station (ADTPS), consisting of two units of 250 MW each, is located approximately 120 km north of Mumbai along the Mumbai–Ahmedabad railway line.

The plant utilizes a mix of Indian washed coal and imported coal as fuel, with a general blending ratio of 80:20. The indigenous coal is received from SECL (Korba), while the imported coal is sourced from countries such as Indonesia and South Africa.

About the Plant

Location: Dahanu, Maharashtra
Type: Coal-based Thermal Power Plant
Installed Capacity: 500 MW (2 × 250 MW)
Commissioned: 1995
Operator: Adani Electricity
Fuel Used: Coal (domestic + imported)



This plant supplies electricity mainly to Mumbai and nearby regions under long-term agreements.

Objectives of the Visit

- To understand the working of a thermal power plant
- To study the Rankine Cycle practically
- To observe major components like boiler, turbine, generator
- To learn about pollution control methods
- To bridge the gap between theory and practical knowledge.

Working Principle of Thermal Power Plant

The plant works on the Rankine Cycle:

1. Coal is burned in the boiler
2. Water converts into high-pressure steam
3. Steam rotates the turbine
4. Turbine drives the generator → electricity produced
5. Steam is condensed and reused

Major Components Observed

1. Coal Handling Plant (CHP)

Coal is transported, crushed, and fed into the boiler

Ensures continuous fuel supply

2. Boiler

Converts water into high-pressure steam

Each unit has a capacity of 250 MW

3. Turbine

Converts steam energy into mechanical energy

4. Generator

Converts mechanical energy into electrical energy



5. Condenser

Converts exhaust steam back into water

6. Cooling System

Uses water (including seawater in some systems) for cooling

Pollution Control Systems

Electrostatic Precipitator (ESP): Removes dust particles

Flue Gas Desulfurization (FGD): Reduces SO₂ emissions

Tall Chimney (275 m): Helps in dispersion of gases

Ash Handling System: Safe disposal of fly ash

Special Features of Dahanu Plant

First plant with advanced environmental certifications (ISO standards)

Uses efficient coal blending techniques

High stack (one of the tallest in Asia)

Focus on sustainability and emission control

Learning Outcomes

Gained practical knowledge of power generation

Understood industrial safety practices

Observed real-time plant operations

Learned importance of environmental management

Improved technical understanding of mechanical systems

Safety Measures Observed

Use of helmets, safety shoes, and PPE kits

Restricted access to hazardous areas

Emergency shutdown systems



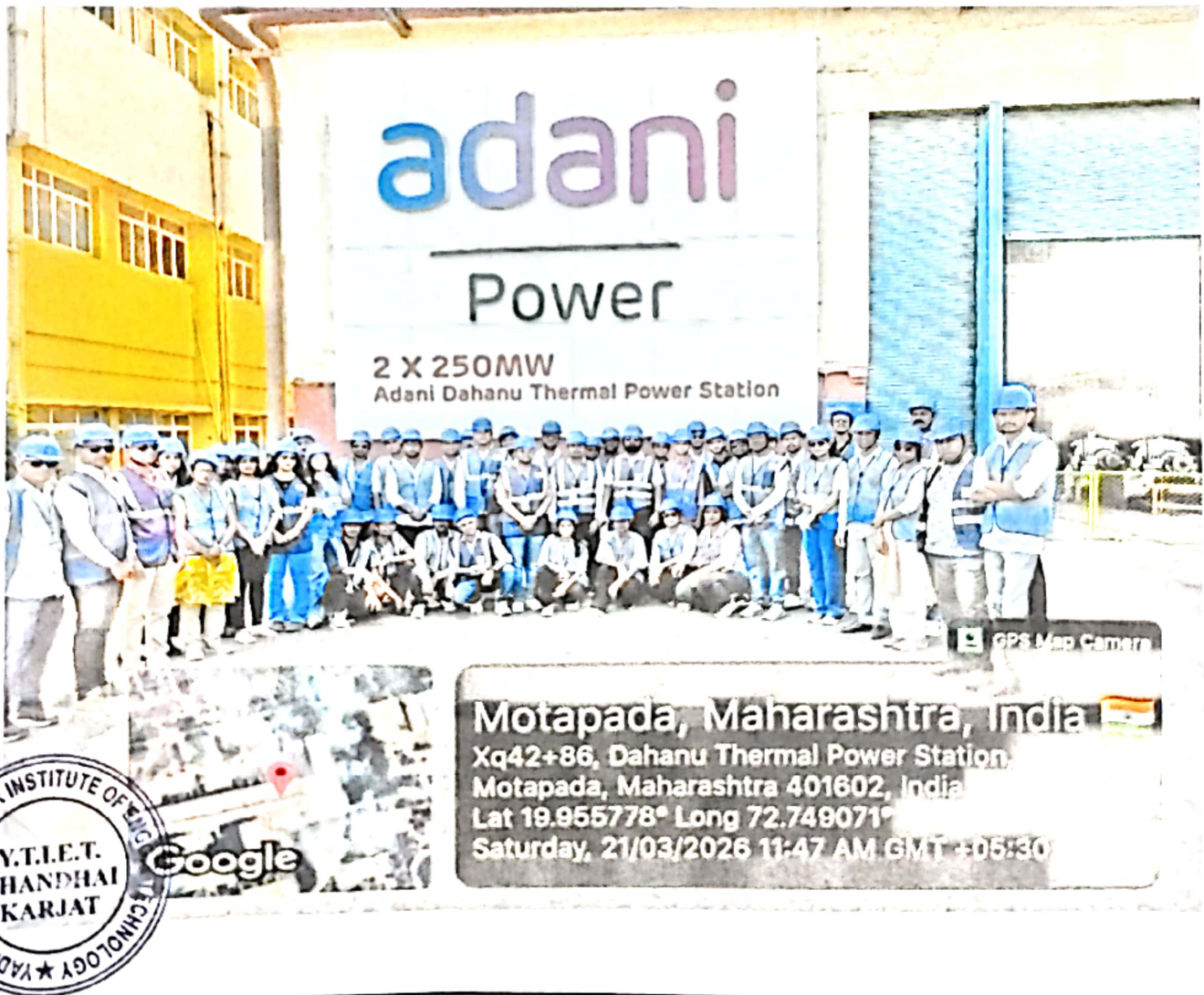
Fire safety equipment installed

Conclusion

The industrial visit to the Adani Thermal Power Plant, Dahanu was highly informative and beneficial. It helped us understand the practical aspects of thermal power generation, environmental protection, and industrial safety. This experience enhanced our technical knowledge and will be useful for our academic and professional growth.

Acknowledgement

We sincerely thank the management and staff of Adani Thermal Power Plant, Dahanu for providing us with the opportunity to visit and learn about the plant operations. We also thank our faculty members for organizing this visit.





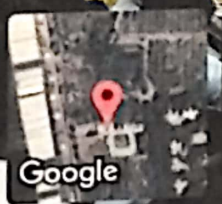
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GPS Map Camera
Motapada, Maharashtra, India
 Xp4x+vr4, Dahanu Thermal Power Station,
 Motapada, Maharashtra 401602, India
 Lat 19.956608° Long 72.748686°
 Saturday, 21/03/2026 12:29 PM GMT +05:30



GPS Map Camera
Dahanu, Maharashtra, India
 Opp Pajwani And Sons Near Post Office Dahanu, Road, Dahanu,
 Maharashtra 401608, India
 Lat 19.974996° Long 72.74493°
 21/03/26 01:02 PM GMT +05:30



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