

Project Development Phase
Model Performance Test

Date	15 February 2026
Team ID	LTVIP2026TMIDS90527
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	10 Marks

Model Performance Testing – Wind Turbine Energy Prediction:

S.N	Parameter	Values	Screenshot
1	Metrics	<p>Regression Model:</p> <p>MAE – 120.5 MSE – 18,200.3 RMSE – 134.9 R² Score – 0.95</p> <p>Classification Model (if applied):</p> <p>Confusion Matrix – N/A (not applicable, regression problem) Accuracy Score – N/A Classification Report – N/A</p>	Scatter plot of Actual vs Predicted Power
2	Tune the Model	<p>Hyperparameter Tuning – Adjusted n_estimators (100 → 200), max_depth tested for optimization</p> <p>Validation Method – Train/Test Split (80/20) with R² evaluation</p>	Grid search or scatter plot