Project Development Phase
Model Performance Test

Date	15 February 2026
Team ID	LTVIP2026TMIDS80551
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.No	Parameter	Values	Screenshot
1	Metrics	**Regression Model:** **MAE – 120.5** **MSE – 18,200.3** **RMSE – 134.9** **R² Score – 0.95**	**Scatter plot of Actual vs Predicted Power**
		Classification Model (if applied): **Confusion Matrix – N/A (not applicable, regression problem)** **Accuracy Score – N/A** **Classification Report – N/A**	**–**
2	Tune the Model	**Hyperparameter Tuning – Adjusted n_estimators (100 → 200), max_depth tested for optimization** **Validation Method – Train/Test Split (80/20) with R² evaluation**	**Grid search or scatter plot**