Project Development Phase
Model Performance Test

Date	14 February 2026
Team ID	LTVIP2026TMIDS84120
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	2 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1	Model Summary	Machine Learning Model: Random Forest Regressor \nInput Features: Weather + Turbine parameters \nTarget Variable: windmill_generated_power(kW/h) \nTrain-Test Split: 80:20 \nEvaluation Metrics: R^2 Score, MAE, RMSE	
2	Accuracy	Training Accuracy (R^2): 0.97 \nValidation Accuracy (R^2): 0.94	
3	Fine Tuning Result (if Done)	Method: Hyperparameter tuning (n_estimators, max_depth) \nValidation Accuracy after tuning (R^2): 0.95	