

Functional & Performance Testing Template
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	

Test Scenarios & Results – Wind Turbine Energy Prediction

Test Case ID	Scenario (What to test)	Test Steps (How to test)	Expected Result	Actual Result	Pass/Fail
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FT-01	Input Validation – Theoretical Power & Wind Speed	Enter valid and invalid numeric values in input fields	Valid inputs accepted, errors shown for invalid/non-numeric inputs	–	–
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FT-02	Weather API Connection	Select a city and check if OpenWeather API responds	API responds successfully with temperature, humidity, pressure, wind speed	–	–
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FT-03	Prediction Output	Provide valid inputs (Theoretical Power, Wind Speed) and click “Predict”	Correct energy output is generated by ML model	–	–
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FT-04	Error Handling	Provide invalid inputs (e.g., empty fields, strings instead of numbers)	Application shows “Invalid Input” message	–	–
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PT-01	Response Time Test	Measure time taken for prediction after submitting inputs	Prediction should be generated in under 3 seconds	–	–
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PT-02	API Speed Test	Send multiple API calls simultaneously for different cities	API should respond without slowing down or		
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