

Electric Vehicle Charge and Range Analysis Visualization Tool

This document presents the testing report and overview of the Electric Vehicle (EV) Charge and Range Analysis Visualization Tool. The tool is designed to analyze battery charge levels, energy consumption, efficiency, and estimated driving range under various operating conditions.

Key Features:

- Real-time battery charge level monitoring (State of Charge - SoC)
- Range estimation based on battery capacity and energy consumption
- Charge/discharge cycle performance tracking
- Energy efficiency visualization (kWh per km or mile)
- Graphical analysis of charging time vs battery percentage
- Comparative analysis of different driving conditions

Testing Summary:

Test Parameter	Result
Battery Capacity Validation	Passed
Charge Time Accuracy	Passed
Range Prediction Accuracy	Within 5% variance
Energy Consumption Calculation	Validated
Visualization Rendering Performance	Optimal

The visualization tool successfully demonstrates reliable charge monitoring and accurate range prediction based on simulated and real-world test scenarios. The testing confirms that the system performs efficiently and provides meaningful graphical insights for EV performance analysis.