Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	26 June 2025
Team ID	LTVIP2025TMID50379
Project Name	Visualization tool for electric vehicle charge and range analysis
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Data Management	CSV/Excel File Upload Data Validation and Processing Multi-dataset Integration
FR-4	Visualization Dashboard	Interactive Charts and Graphs Real-time Data Filtering Export Visualization Reports
FR-5	Analytics Engine	Range vs Efficiency Analysis Market Trend Predictions Comparative Performance Metrics
FR-6	Geographic Analysis	India vs Global Data Comparison State-wise Charging Infrastructure Regional Market Insights

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Intuitive dashboard interface with drag-and-drop functionality, responsive design for mobile and desktop, user-friendly data upload process
NFR-2	**Security**	Encrypted data transmission (HTTPS/TLS), secure file upload validation, user authentication and authorization, data privacy compliance
NFR-3	**Reliability**	99.5% uptime availability, error handling for corrupt data files, automatic backup and recovery systems
NFR-4	**Performance**	Dashboard load time < 3 seconds, real-time chart updates < 1 second, support for datasets up to 100MB, concurrent user support (50+ users)

NFR-5	**Availability**	24/7 system availability, cloud-based deployment, load balancing for high traffic, disaster recovery mechanisms
NFR-6	**Scalability**	Horizontal scaling capability, modular architecture for easy feature additions, database optimization for large datasets