

Build Interactive India EV Infrastructure Dashboard — Map + State-wise

10/21/2026 06:37 AM - Shreya Agarwal

Status:	New	Start date:	10/21/2026
Priority:	Normal	Due date:	
Assignee:	Shreya Agarwal	% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:		Spent time:	4.00 hours
Description Develop a dashboard featuring an interactive map of India with every state displayed in a different color based on EV infrastructure data. The dashboard should provide state-wise statistics for the total number of EV stations and installed charging machines. The primary objective is to visualize the distribution of EV infrastructure across India and allow users to quickly understand the infrastructure available in each state. 2. Core Requirements A. Interactive Map of India Display a map of India with clearly distinguishable state boundaries. Display all states included in the available data. Assign different colors to states based on their EV infrastructure statistics or a defined data-based color scale. Ensure that individual states can be identified easily. Make each state interactive so users can select or hover over it to view its statistics. B. State-Wise EV Infrastructure Statistics For each state, display the following information: State Name Total EV Stations: Total number of EV charging stations in the state. Total Installed Machines: Total number of charging machines installed in the state. The displayed totals must be calculated using the underlying data and should match the API response. C. State Information on Interaction When a user hovers over or selects a state on the map, display the corresponding state information, including: State name Total EV stations Total installed machines The information should update according to the selected state. D. Dashboard Summary Display India-wide summary statistics above or alongside the map: Total EV stations across all states. Total installed charging machines across all states. These figures must be consistent with the state-wise totals returned by the API. 3. Backend API Requirements Develop an API that provides all information required by the dashboard. The API should return: State name and a consistent state identifier. Total number of EV stations in each state. Total number of installed charging machines in each state. Any additional state-level fields required to map the API response to the corresponding state on the India map. Aggregated totals for India, including total EV stations and installed machines. The API should provide a consistent response structure, handle states with no matching records appropriately, and avoid double-counting stations or machines when calculating totals. The exact data sources, database relationships, field names, aggregation logic, and API endpoint will be finalized after reviewing the existing project structure and the data provided. 4. UI/UX Requirements Use a clean, professional dashboard layout. Keep the India map as the primary visual element. Use distinguishable state colors with an appropriate legend if color intensity represents infrastructure levels. Ensure state names and numerical statistics remain readable. Provide a clear loading state and an appropriate error or empty-data state. Make the map usable on desktop and responsive on smaller screens. 5. Additional Enhancements The following may be considered after the core functionality is implemented: State-wise ranking by EV stations and installed machines. Search or filter states. A detailed state information panel.			

State-wise comparison charts.
Filters based on available infrastructure categories or other fields supported by the data.
These enhancements are secondary and should not delay the core map and statistics functionality.

6. Acceptance Criteria
The dashboard displays an interactive map of India with identifiable state boundaries.
Every applicable state is associated with the correct data.
State colors are applied consistently according to the agreed visualization logic.
Hovering over or selecting a state displays its EV station and installed machine totals.
India-wide totals are displayed correctly.
The backend API returns all data required by the frontend without requiring additional state-by-state API calls.
The API aggregation logic avoids duplicate counting and follows the existing data relationships.
The map correctly handles states with zero records or missing data.
API and UI loading, error, and empty-data states are handled appropriately.
The implementation uses the actual project data and existing architecture rather than assumed database fields or relationships.

7. Dependencies
Review the existing project structure and backend architecture.
Inspect the supplied data and identify the correct source tables, identifiers, and relationships.
Confirm how EV stations and installed charging machines are represented in the data.
Determine the appropriate India state map data and the mapping between state identifiers and map boundaries.

Expected Outcome
A working India EV Infrastructure Dashboard that visually represents state-wise EV infrastructure and displays accurate EV station and installed machine counts through a dedicated API. The API and dashboard implementation will be finalized after the actual data is reviewed.

History

#1 - 10/21/2026 09:02 AM - Shreya Agarwal

Today, developed and refined the EV Infrastructure State-Wise Map dashboard accessible via direct routing at /ev-infrastructure-state-wise-map. The interface was built strictly adhering to the standard project theme and design patterns of Location Management (LocationList.tsx), using official branding colors, typography design tokens, and clean card elevations. All summary figures, state records, and map visualizations were connected dynamically to the backend API (GET /api/v1/station/charging-station/state-wise-statistics with header 'x-api-version': '1.0'), ensuring that no statistics, counts, or state metrics are hardcoded.

The dashboard features four responsive summary cards (Total Stations, Total Installed Machines, Active States with machines, and 0-Machine States) that compute live metrics directly from the API response. Below the summary cards, an interactive India vector map renders all 36 Indian states and union territories, applying distinct colors to states with installed machines while strictly rendering zero-machine states in clean white with dark borders. Selecting or hovering over any state seamlessly updates the detailed side metrics panel and highlights the corresponding state data.

Furthermore, implemented a comprehensive filter bar modeled after Location Management, incorporating a state search input, a dynamically bound State Filter dropdown (populated via the state-wise statistics API and tenant states API), a Status Filter, and dedicated Apply/Reset filter buttons. The header refresh control was updated to a minimalist white square icon button with a primary blue refresh icon and smooth loading spin animation matching the design reference.