Electric Vehicle Market Analysis using Tableau

Project Overview

This project presents a comprehensive analysis of the electric vehicle (EV) landscape in the United States, focusing on the adoption trends, market segmentation by vehicle type (BEV vs. PHEV), state-wise distribution, and the impact of incentive programs like CAFV. The analysis is performed using Tableau with data preprocessing handled in Excel.

Objectives

- - Evaluate the total count and growth of electric vehicles from 2010 onwards.
- - Compare Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs) by volume and market share.
- - Analyze average electric range to track technological progress.
- - Identify leading EV manufacturers and popular models.
- - Assess state-level EV adoption patterns.
- - Examine the proportion of EVs eligible for Clean Alternative Fuel Vehicle (CAFV) incentives.

Visualizations Included

- - EV Growth Over Years | Line/Area Chart | Historical adoption trend
- - Average Electric Range | KPI / Bar | Battery efficiency and tech advancement
- - BEV vs. PHEV Count & % | KPIs + Pie Charts | Market share distribution
- - Vehicles by State | Map Chart | Regional adoption trends
- - Top 10 Makes | Bar Chart | Leading manufacturers
- - CAFV Eligibility | Donut Chart | Incentive participation
- - Top 10 Models | Tree Map | Consumer model preferences

Tools Used

- - Tableau: Interactive dashboards and data visualization
- - Microsoft Excel: Data preprocessing and cleaning
- - GitHub: Project documentation and version control

Key Insights

- - Significant growth in EV adoption observed post-2015.
- - BEVs constitute the majority share, indicating a shift towards fully electric platforms.

- - California emerges as the leading state in EV registrations.
- - Tesla dominates both in terms of brand and individual models.
- - Government incentives play a critical role in influencing EV adoption.
- - Continuous improvements in electric range reflect advancements in battery technology.