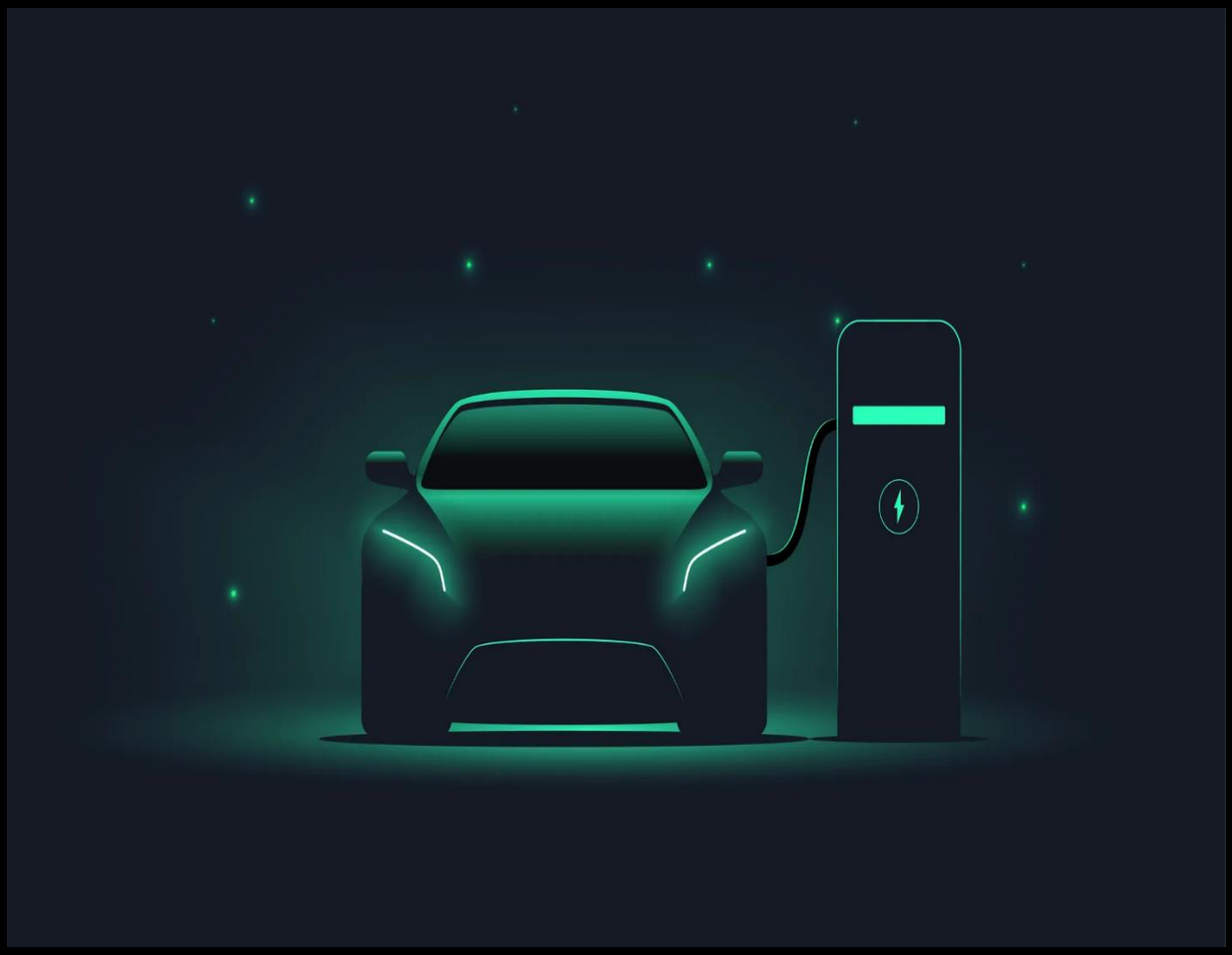

A Report On

Electric Vehicle

Presented by

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Electric Vehicle Report

Introduction

Electric vehicles (EVs) are automobiles that are powered by electricity rather than traditional internal combustion engines that rely on fossil fuels like gasoline or diesel. EVs use electric motors, which are powered by energy stored in rechargeable batteries, to drive their wheels.

Specified coloumn in our dataset:

1. Acceleration: Acceleration refers to how quickly the vehicle can increase its speed.
2. Bodystyle: Bodystyle refers to the shape and design of a vehicle's body, including its size, structure, and intended functionality.
3. Brand: Brand refers to the manufacturer or company that designs, produces, and markets the vehicle.
4. Efficieny_watt-hours per kilometer: Efficiency in Watt-hours per Kilometer (Wh/km) measures how much energy an electric vehicle (EV) uses to travel one kilometer.
5. Fast charge_kilometers per hour: Fast Charge - Kilometers per Hour (km/h) refers to the amount of distance an electric vehicle (EV) can travel for each hour of charging when using fast-charging technology
6. Model: Model typically refers to a specific version or variant of an EV produced by a particular brand.
7. Plug Type: Plug type refers to the type of connector used to charge an electric vehicle (EV).
8. Power Train: The powertrain of an electric vehicle (EV) refers to the components that generate and transmit power to the wheels of the vehicle.
9. Price In Indian Rupees: The price of electric vehicles (EVs) in India varies greatly depending on the brand, model, features, and battery size.
10. Range_kilometers: The range of an electric vehicle (EV) refers to the distance it can travel on a full charge of its battery.

11. Rapidcharge: Refers to the method of charging an electric vehicle (EV) at a significantly faster rate compared to regular home charging or standard public charging stations.

12. Seats: The number of seats in an electric vehicle (EV) can vary depending on the model and its intended use.

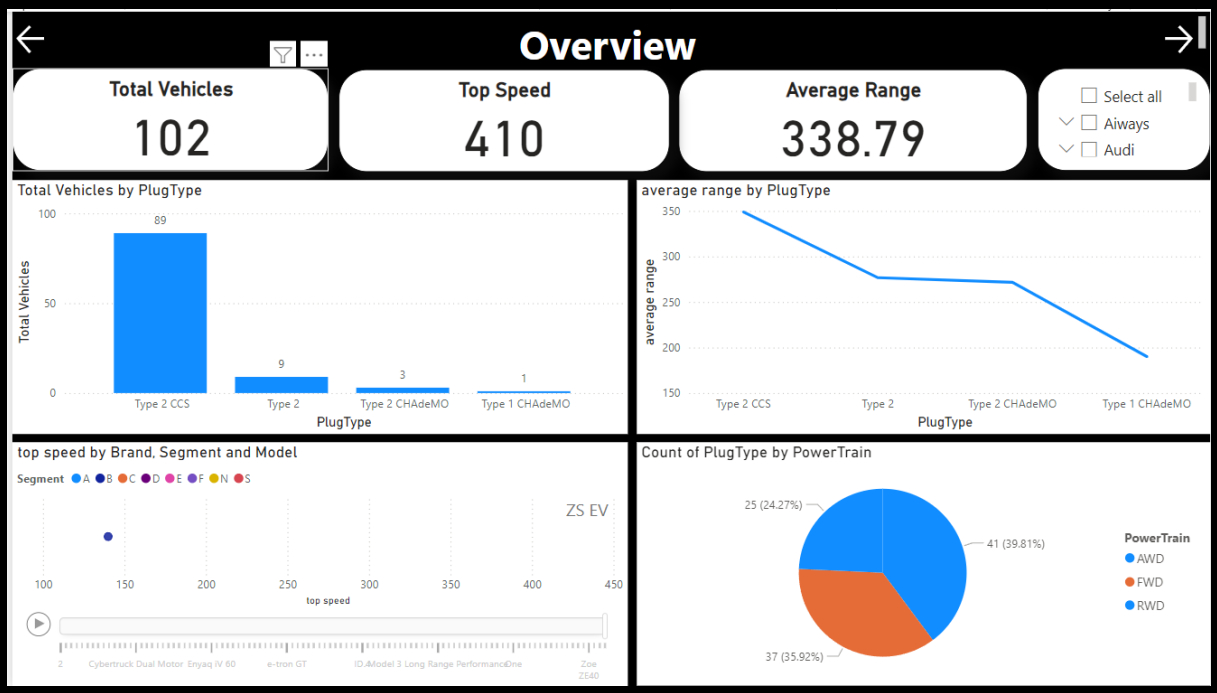
13. Segment: The term segment refers to the classification of vehicles based on their size, price, features, and target market.

14. Top Speed: The top speed of an electric vehicle (EV) refers to the maximum speed the vehicle can achieve when fully powered.

This Dashboard contains two pages:

1. Overview
2. Performance Matrics

Overview:



Visual Used:

Slicer: Model and Brands

Dynamically filters the visualisation for a specific Models and Brands.

Clustered Column Chart (Total Vehicles by Plug Type):

This chart shows the distribution of EVs based on their plug type:

- Type 2 CCS: Dominates with 89 vehicles.
- Type 2: 9 vehicles.
- Type 2 CHAdeMO: 3 vehicles.
- Type 1 CHAdeMO: Only 1 vehicle.

Scatter Chart (Top Speed by Brand, Segment, and Model):

Displays the top speed of various EV models across different segments (represented by colored dots).

Line Chart (Average Range by Plug Type):

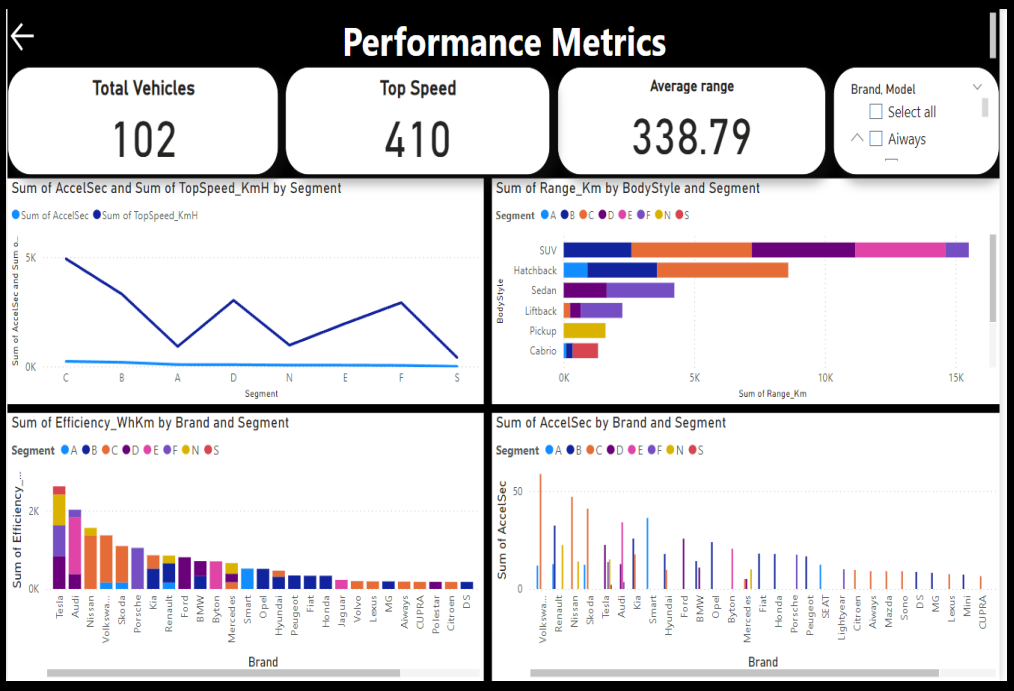
I. Highlights the average range (in km) of EVs by their plug type.
II. Type 2 CCS offers the highest average range, while Type 1 CHAdeMO has the lowest.
III.

Pie Chart (Count of Plug Type by PowerTrain):

Breaks down the plug type count by powertrain:

- AWD (All-Wheel Drive): 41 vehicles (39.81%).
- FWD (Front-Wheel Drive): 37 vehicles (35.92%).
- RWD (Rear-Wheel Drive): 25 vehicles (24.27%).

Performance Matrics:



Visuals Used:

Line Chart (Sum of Acceleration Time and Top Speed by Segment):

- Y-axis: The chart plots the sum of acceleration times (AccelSec) and top speeds (TopSpeed_KmH).
- X-axis: Vehicle segments (A, B, C, etc.).
- The chart shows variation across segments, with some having higher acceleration times and lower speeds, while others perform better in terms of speed.

Stacked Bar Chart (Sum of Range by Body Style and Segment):

- Y-axis: Different body styles, such as SUV, Hatchback, Sedan, Liftback, Pickup, and Cabrio.
- X-axis: Total range in kilometers.
- The chart shows:
  - SUVs and Hatchbacks dominate the total range.
  - The contribution of segments within each body style is color-coded.

Stacked Column Chart (Sum of Efficiency by Brand and Segment):

Y-axis: Sum of energy efficiency (measured in Wh/km).

X-axis: EV brands, such as Tesla, Nissan, Volkswagen, etc.

Highlights which brands and segments are more efficient, with Tesla and Nissan showing notable performance in lower energy consumption.

Line & Clustered Column Chart (Sum of Acceleration Time by Brand and Segment):

- Y-axis: Total acceleration times (AccelSec).
- X-axis: Vehicle brands.
- Shows the cumulative acceleration times for various brands across segments, giving insight into performance differences:
- Some brands like Volkswagen, Tesla, and Audi have significant data points, while others are more niche.

Conclusion

Electric vehicles are a cornerstone of a more sustainable transportation future. While there are still challenges to overcome, such as the cost of EVs, battery technology, and charging infrastructure, the benefits in terms of environmental impact, cost savings, and technological advancement make EVs a key player in addressing climate change and reshaping the global automotive industry. With continued innovation, adoption, and government support, the shift toward EVs will likely become a pivotal element in creating cleaner, more energy-efficient societies.