Charging Ahead: Electric Vehicle Growth Dashboard

This report provides insights into the Electric Vehicle (EV) market using Power BI. The analysis leverages the **electric_vehicles_dataset.csv** along with DAX calculations to uncover trends, performance metrics, and cost efficiency indicators. The dashboard visualizes sales performance, battery characteristics, cost per kilometer, and safety ratings, offering stakeholders a comprehensive view of the EV ecosystem.

Data Preparation:
- Removed duplicates using Power Query.
- Ensured proper data types (e.g., Whole Number for Year, Decimal for Price & Battery Capacity).
- Renamed long columns (e.g., Battery_Capacity_kWh → Battery Capacity (kWh)).
- Created lookup dimension tables (Manufacturer_Dim, Battery_Dim) for better relationships.

DAX Calculations:
- **Calculated Columns:**
• Cost per KM = Price (USD) ÷ Range (km)
• Emission Status = IF(CO2 Emission = 0, "Zero Emission", "Emission")

- **Measures:**
• Revenue ($) = SUMX(Units Sold * Price)
• Safety Rating = AVERAGE(Safety Rating)
• Running Cost per KM = AVERAGEX(Battery Capacity * 0.12 ÷ Range)

Key Insights from Dashboard:
- **Total Revenue:** $30.85M in 2024.
- **Average Safety Rating:** 4.0 stars.
- **Total Battery Capacity:** 254.8K kWh.
- **Average Running Cost per KM:** 0.04 USD/km.
- Sales distribution shows top manufacturers dominating global EV markets.
- Regional analysis highlights strong adoption in Asia, Europe, and USA.
- Battery type comparison reveals varying efficiency and costs per kilometer.

Conclusion:
This EV dashboard offers a clear and interactive way to evaluate the growth and adoption of electric vehicles. By combining KPIs, sales trends, battery insights, and cost analysis, it empowers manufacturers, policymakers, and investors to make data-driven decisions.