# **Electric Vehicle Adoption and Insights**

## **Introduction**

With the rise of sustainable energy solutions, electric vehicles (EVs) are gaining traction across various regions. Understanding the distribution, adoption trends, and eligibility for clean energy programs is crucial for policymakers, utility providers, and automotive industries. This project aims to provide a comprehensive analysis of electric vehicle adoption using key metrics such as vehicle make, model, electric range, geographic distribution, and eligibility for clean alternative fuel programs. By leveraging BI Tools’ interactive dashboards, this project will help stakeholders gain insights into EV adoption patterns and infrastructure requirements.

## **Project Overview**

This project will analyze a dataset containing information on electric vehicles registered across different counties and cities. The dataset includes details such as the **vehicle make, model, model year, electric vehicle type, range, fuel eligibility, geographic location, and utility providers**. The goal is to create an interactive **dashboard** that visualizes electric vehicle adoption patterns and helps in decision-making for future EV infrastructure planning and policy-making.

## **Key Objectives**

## **EV Distribution Analysis:** Identify trends in electric vehicle adoption based on **model year, vehicle make, and electric range.**

## **Geographic Insights:** Analyze the distribution of EVs across **different counties, cities, and postal codes.**

## **CAFV Eligibility:** Evaluate which EVs qualify as **Clean Alternative Fuel Vehicles (CAFV)** and identify patterns in eligibility.

## **Electric Range Analysis:** Examine the **battery range** of different EV models and their impact on CAFV eligibility.

## **Utility Providers & Infrastructure:** Identify **electric utility providers** serving EV users and assess the potential demand for charging infrastructure.

## **Legislative & Policy Impact:** Understand the influence of **legislative districts** on EV adoption and fuel eligibility.

## **Data Visualization Features**

## **Interactive Maps & Geospatial Analysis** to visualize EV distribution across counties and cities.

## **Dynamic Filters & Slicers** for analyzing EV adoption based on model year, make, and fuel eligibility.

## **Time-Series Analysis** to track adoption trends over different years.

## **Bar & Pie Charts** to compare different **vehicle makes, models, and electric ranges**.

## **Key Metrics Cards & KPIs** to highlight the percentage of CAFV-eligible vehicles and the overall electric range distribution.

## **Heatmaps & Cluster Analysis** to determine regions with high EV concentration.

## **Submission Requirements**

## A **Dashboard** with clear, interactive visuals that provide meaningful insights into electric vehicle adoption.

## A **report summarizing findings**, key takeaways, and actionable recommendations.

## Well-structured and labeled visuals for easy interpretation.