EV Power - Lab 4 Project Report

Example Solution 1

Part 0: libraries

Part 1: Defining Research Question

Chosen Question: How do average energy prices change across states between 2021 and 2023? Considering the rise of electric vehicle (EV) usage, as well as increasing cost-of-living across the country amidst the continual supply-chain recovery from the COVID-19 pandemic, can we expect energy prices to increase nation-wide?

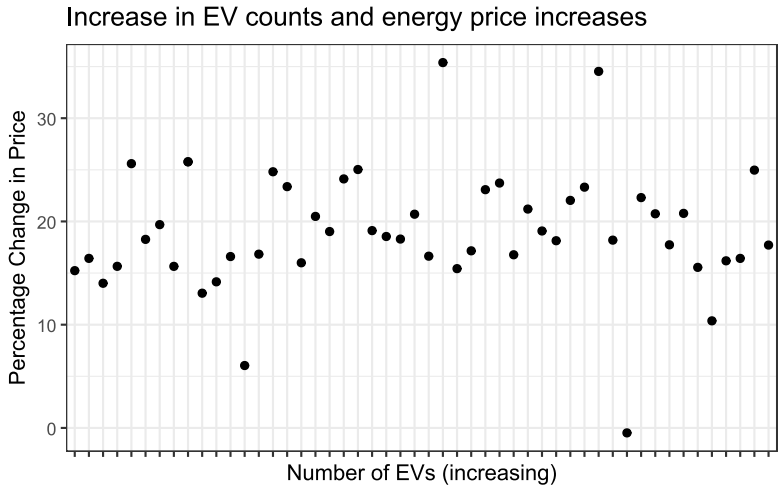
Part 2: Data Preparation and Cleaning

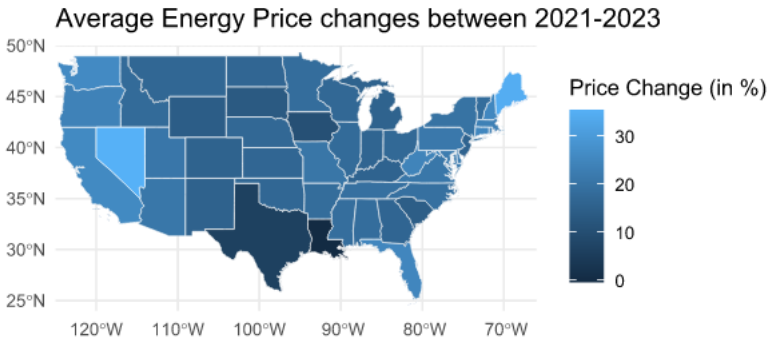
Part 3: Joining / Pivoting Datasets for Analysis

```
       STATE perc_change21_23
1  Louisiana       -0.4807692
2      Texas        6.0439560
3       Iowa       10.3721782
4 Washington       25.7756563
5      Maine       34.5343940
6     Nevada       35.3860730
```

```
   average  std_dev
1 19.12075 5.859977
```

Part 4: Mapping Visualization





Prices seem to rise across the country, with rates highest in Maine (34%) and Nevada (35%), and the lowest rates in Texas (6%) and Iowa (10%). The only state that experienced falling energy prices was Louisiana, which experienced a negligible 0.4% decrease across two years. The highest increases in prices appear clustered along the coasts, with the majority of the inner states experiencing lower rates between 10-20%. The average price increase across all states is relatively high, sitting at 19.1%, ableit with a relatively high standard deviation. Increases in prices, however, do not seem to correlate with the number of EVs in a state. That is, it seems like the rise in prices of energy is caused by some other factor.