EV chargers and EV in NSW

Team Members

- Cayley Morrow
- Chang Yu
- Damian Kifuso
- Julian Ravelo

Project description

Using a dataset with the location of EV chargers in New South Walles and the registration of electrical vehicles found in https://nationalmap.gov.au/, we aim to create a dashboard that allows users to navigate through the datasets and find relationships between vehicles registered per postcode, EV chargers available, number of vehicles registered per year, brands of the vehicles registered, and all different demographic information. Additional we will be highlighting the energy sources currently available to supply electricity to EVs and what are the implications of this.

Research question to answer

- What is the relationship between the electrical vehicles registered per postcodes in NSW and the EV chargers available?
- What is the number of electrical vehicles registered per year?
- What are the main brands registered in NSW?
- What is the main energy source that provides the electricity to EVs?

Datasets to be used

The electric vehicle datasets were found in https://nationalmap.gov.au/ which is an Australian Government website found through data.gov.au. "NationalMap provides easy access to over 13,000 datasets for use by government, business and the public. National map connects to data automatically from data.gov.au, it does not store the data itself, but refers to the servers of the data contributors, directly harvesting that data and presenting it in the map."

The fuel dataset was found in https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/data-dashboard-nem which is an Australian Energy Market Operator (AEMO) that "manage the electricity and gas systems and markets across Australia, helping to ensure Australians have access to affordable, secure and reliable energy." Company ownership is 60% government and 40% private.

The csv files that will be used in the project were exported from the Electric Vehicle data category.

- chargers_by_postcode_prototype.csv
  - The dataset contains number of Electric Vehicle (EV) registrations by postcode for a specified year. The data documents the total number of vehicles registered in that year, regardless of whether they are new registrations or a re-registration. The years documented in the dataset are between 2017 and 2021. There are 4,751 rows of data.
- ev_evc_prototype.csv

- The dataset contains the number and location of current Electric Vehicle (EV) charging stations. The dataset contains information such as name, location details, charger type, plug type, charging network, power (kW), and hardware brand. There are no dates documented in the dataset. There are 505 rows of data.

The csv file that will be used in the project were exported from the Fuel Mix information.

- NEMFUELMIX_ALL_202311022050.csv
  - Breakdown of energy sources in the Australian National Electricity Market (NEM), the dataset reflects energy source distribution of all Australian States (not including WA, NT, and ACT) between 29th October 2022 to the 21st October 2023. There are 1,524 rows of data.

Rough breakdown of tasks
- Clone repository to desktops
- Create a DB with the datasets
- Clean the data and prepare it to use it on JavaScript
- Access the database using HTML and JavaScript
- Create functions to generate polygons for postcodes and markers for EV charger locations
- Generate conclusions
- Organise presentation