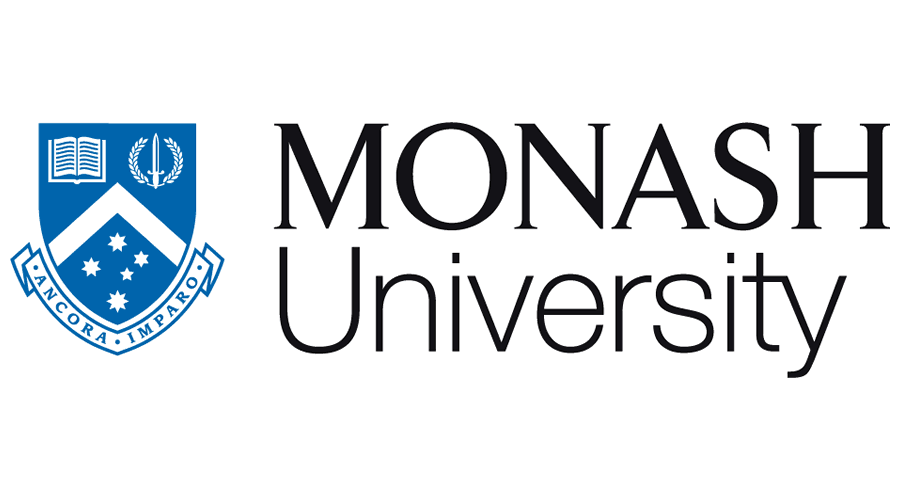
**Electric Vehicles Around the World**

FIT3179 Data Visualisation 2 Report

**Link Visualisation:**

**Word Count Excluding References and Appendix:**



Luke Bonso

**Domain:**

The domain of the dataset is the world’s use and adoption of electric vehicles. The visualisation will examine how different countries have adopted the use of electric vehicles over a time period from 2011 to 2020. This will allow the user to see and compare Australia’s usage rate of electric vehicles to that of the rest of the world.

**Why?:**

The visualisation will be interesting and useful for users as it will explore which countries are more heavily adopting electric vehicles and how sales and stocks of these electric vehicles are changing over time for each country.

A user for this visualisation could be those people who would like to invest in an electric vehicle. Their use case with this visualisation could be to identify trends in electric vehicle sales within their respective country, along with trends in how the charging infrastructure has changed over time to see if an electric vehicle is the right choice for them.

This visualisation will also be interesting as it could demonstrate which countries are more rapidly moving towards electric vehicles, allowing for the user to see which countries are actually making legitimate strides towards reducing the number of fossil fuel powered vehicles on the road. This could aid auto manufacturers in deciding which markets to target with electric vehicles.

**Datasets:**

The data set which is used is the Kaggle IEA-EV-data dataset (Shakya, 2023). This set is a time series for each country, from 2011 to 2020, with the following attributes recorded; EV sales, EV sales share, EV charging points, EV stock and EV stock share.

**Rationales for Idioms:**

**Dot Plot:**

The reason the dot Idiom plot was chosen was to be able to compare two main measures (Total Electricity Production and Renewable Electricity Production) for all countries whilst also being able to visualise the population for each country. The log scale on both axis’s was to spread the points to make the points more selectable (Robbin, 2012).

**Stacked Bar Chart:**

The stack bar chart was chosen to show how the amount of energy produced from each type of resource changes over time for a selected country. The position on a common scale shows the user how the composition of resources has changed over time.

**Line Chart:**

The line chart was used to display how a particular measure changes over time. Multiple lines were added to each line chart to see how multiple attributes changed over time and to see the changes relative to each other.

**Rationales for Design:**

**Layout:**

The visualisation is organised into two main columns. In the left most column at the top there is the main visualisation and under two smaller plots. Then in the right column there are three visualisations. There are two main rows. The first row has the main plot and the first two plots of the right column. The second row has the lower to plots for the first column and the lower plot for the right-side column. All plots are aligned with the sight lines for rows and columns.

**Colour:**

The colour chosen for all the headings was black, this is as the background of the dashboard is white. The text paragraphs were chosen to be a dark shade of grey as to emphasize less importance than the headings. These option was chosen as it would allow the text to be easy to read and avoid the reader having to strain their eyes.

For the charts a colour-blind friendly pallet was chosen for the lines and legends. This pallet was chosen to be the tableau orange-green-teal pallet as it did not include a combination of reds and greens together. To keep the visualisation consistent all of the charts used the same colour pallet.

**Figure-Ground:**

For all the plots figure-ground is implemented as when the user clicks on a certain attribute displayed in one of the plots (specific line), or on the legend for that plot, all other attributes will be dulled, and the selected attribute will be highlighted. This idea is also used with the text under each plot, given each plot is the main feature the text on how to use the plot is in grey so it is less emphasised and is the ground.

**Typography:**

A non-standard, Sans serif-based type face called; Yu Gothic was chosen as the type face for the as it gave the visualisation a professional look whilst still being easy for the user to read. Text was centre aligned as to be placed in a central position below each chart, in order to not make the visualisation look unbalanced.

**Storytelling:**

The story telling genre which this visualisation implements is that of a comic strip. That is the user reads it left to right, top to bottom. This is as the main plot in the top left corner is to be started on, where the user is instructed to select a country, then all the other plots change to reflect the selected country.

**References:**

[1] Shakya, A. (2023). IEA EV dataset 2023. Retrieved from: <https://www.kaggle.com/datasets/aakashshakya/iea-ev-dataset-2023>

[2] Brinaru, A. (2021). How to create a Parallel Coordinate Plot. Retrieved from: <https://btprovider.com/how-to-create-a-parallel-coordinates-plot/>

[3] Robbin, N. (2012). When Should I Use Logarithmic Scales in My Charts and Graphs?. Retrieved from:

<https://www.forbes.com/sites/naomirobbins/2012/01/19/when-should-i-use-logarithmic-scales-in-my-charts-and-graphs/?sh=199c5fe65e67>

**Appendix:**

**5 Design Sheet:**

**Sheet 1:**

**Sheet 2:**

**Sheet 3:**

**Sheet 4:**

**Sheet 5:**