Executive Summary

Group 2: Transportation Electrification Analytics

Problem: We were tasked with building a data driven visual dashboard to portray the current state of Electric Vehicle Adoption across Canada. The dashboard was to give an overview of the entire country and allow for isolating the statistics for individual or a combination of provinces. The project also included identifying the relevant metrics and information to include in the dashboard and then identifying sources of data, process them, and include them. The final part of the project was to derive insights into the current state of EV adoption and identify next steps to make the dashboard more robust.

Findings:

1. During the COVID-19 period, while there was a decline in the growth rate of total vehicle registrations, electric vehicles (EVs) continued to experience a steady increase.
2. Cities such as Toronto, Vancouver and Montreal are clearly visible in the dashboard as adoption hotspots for EVs.
3. The average capable distance of available electric vehicles in Canada has steadily increased due to technological advances in charging capabilities and battery technology
4. The number of level 2 and DC fast charging ports is increasing at a significant rate across Canada since infrastructure development began around 2010.
5. Quebec and British Columbia clearly have the highest adoption rates among all the provinces and this may be explained by the additional incentives offered by the Provincial governments on top of the Federal Rebate Program

Next Steps:

- The data for medium duty and heavy duty electric vehicles is kept confidential by the Canadian government, however given the size and importance of this market a different modelling/data sourcing technique should be investigated to give insight on this part of the market.
- Total cost of ownership and operation of ICE and EVs should be evaluated and compared given that it was identified that the majority of adoption globally is due to adopters believing it will save them money over the lifetime of the car.
- Research up and coming technology and attempt to model how they will impact existing trends in the market. For example, if a new battery is developed which enables much farther distances per charge then how this data and dashboard is to be interpreted will change.