**Executive Summary**

*In this project I seek to compare the rollout, prevalence, ease of access, and usefulness for daily as well as long distance travel of public electric vehicle (EV) charging networks compared to the existing petroleum fuel station network in the US.*

**Motivation**

*I have been interested in EV’s and alternative energy in general (non fossil fuel) for a long time. With the rise of Tesla, and the rapid refocusing of larger legacy car manufacturers to EV technology and away from fossil fuel technology, I am convinced that EV adoption is happening at a much faster pace than most people realize. One crucial factor in widespread adoption of EV’s is easy access to charging infrastructure for everyone both for local commuting and for long trips. The existing gas station network, with over a century of development behind it, is the hallmark of convenience and widespread availability for vehicle fuels.*

**Data Question**

1. What is the current state of public charging networks in this country and how are they growing
2. How does that compare to the existing gas station network
3. What needs to happen to bring parity for EV charging in terms of availability and ease of access

**Minimum Viable Product (MVP)**

*Define your MVP. This should be a description of what your final capstone will look like, including visualizations, how the analysis will be presented, who the intended audience is, etc.*

*The intended audience is anyone who is on the fence or is thinking about purchasing an electric vehicle but has range anxiety.*

*The final presentation will be a dashboard with an explanation and use page then an interactive dashboard with charging and gas stations mapped. Maybe sliced by type of charging as user selectable options.*

*As a stretch goal the dashboard should allow mapping of an actual trip to demonstrate utility but I’m not sure yet how possible this is.*

*Another stretch goal if I have time and can find a good data source would be total power usage for current EV charging in the country vs power required for well to tank delivery of gas used by ICE vehicles.*

**Schedule (through Jan 6)**

1. Get the Data (NOV 20)
2. Clean & Explore the Data (DEC 4)
3. Create Presentation of your Analysis (DEC 11)

* Should be a presentation, but could include a Jupyter Notebook or dashboard in Excel, Tableau, or PowerBI

1. Internal demos (DEC 21)
2. Demo Day!! (Jan 6)

**Data Sources**

*For charger location data:* [*https://afdc.energy.gov/fuels/electricity\_locations.html#/analyze?fuel=ELEC*](https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC)

*There is a publicly available API*

*Still looking for a good free source for gas station data*

**Known Issues and Challenges**

*Explain any anticipated challenges with your project, and your plan for managing them. Be sure to include:*

* *If you need to request data or an api key*
* *Based on your data sources, known data cleaning steps*