**Capstone Project 1 Proposal**

**Proposal 1**

**Title:**

Forecasting energy demand/solar generation/wind generation/hourly price 24 hours in advance in Spain.

**The Dataset:**

The dataset contains 4 years of energy demand, generation by energy source, hour by hour pricing, and weather data for Spain. This dataset can be used to forecast energy demand, solar or wind energy generation as well as future 24-hour hourly energy prices.

This project will be forecasting **xxxxx**.

The dataset is from Kaggle. It is a collection of data from **xxxxxx**

**The Problem and the Client:**

**The Clients: Ministry of Energy, Energy Operators in Spain.**

Daily energy demand is difficult to forecast. There is such a thing as overproduction of energy for a day. Excess energy input into the grid can suffocate the grid and cause shutdowns.

Given that renewable energy generation is highly dependant on weather conditions, the output from these sources is variable. If weather conditions are favourable and renewable energy sources are abundantly producing on a day, then operators must quickly reduce fossil fuel output to avoid a grid oversupply meltdown which translates to extra unnecessary cost in energy production.

By accurately forecasting energy demand 24 hours in advance, the clients will know how much energy is required for each day and can use other models to forecast energy source distribution for the day. This will reduce wasted energy cost as well as unbudgeted operational cost to switch energy sources.

This project will create a model that will forecast energy demand by taking into consideration the time of year and weather conditions such as temperature, pressure, humidity.

**Deliverables:**

* Data Cleaning and removing unnecessary features from the dataset.
* What is the problem you want to solve?
* Who is your client and why do they care about this problem? In other words, what will your client do or decide based on your analysis that they wouldn’t have done otherwise?
* What data are you using? How will you acquire the data?
* Briefly outline how you’ll solve this problem. Your approach may change later, but this is a good first step to get you thinking about a method and solution.
* What are your deliverables? Typically, this includes code, a paper, or a slide deck.