

Question Proposal

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1 Proposal

We plan to determine what effects different types power plants have on air quality in their surrounding areas.

To determine the effects of different types of power plants we are looking first at a database of power plants. We are then comparing the locations of there different types of power plants to their emissions (PM 2.5s and CO2). Power plants output many different types of emissions, but we chose PM 2.5 and CO2 emissions to monitor as we think they are the most important. CO2 is a greenhouse gas and correlates with global warming. PM 2.5 stands for Particulate Matter at or below 2.5 micrometers. PM 2.5 levels are important as they can be inhaled deep into the lungs where gas exchange occurs with the bloodstream. PM 2.5 stays suspended in the atmosphere for weeks and may travel long distances. High PM 2.5 levels have been found to increase death rates from air pollution. “If the particles are water soluble, they can pass into the bloodstream within minutes. If they are not water soluble, they remain in the alveolar portion of the lungs for a long time. However, when the small particles go deeply into the lungs and become trapped this can result in lung disease, emphysema and/or lung cancer in some cases.”(1) CO2 is a greenhouse gas and plays a significant part in global warming. Need I say more? Drawing links between different power sources and the emissions in their surrounding areas is incredibly important. If we find strong correlations between these pollutants and a power source, we may be able to create legislation to dissuade the use of certain power plant types.

2 Data Sets

Power Plant data set: <http://datasets.wri.org/dataset/globalpowerplantdatabase>

CO2: <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC>

PM2.5: <https://data.worldbank.org/indicator/en.atm.pm25.mc.m3>

3 Citations

(1) “What Is Particulate Matter.” Understanding Particulate Matter, Air Quality, Particle Pollution, Dylos Corporation, www.dylosproducts.com/whispama.html.