Practicum Project Solar and Wind Energy

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**Predict the Growth of Wind and Solar energy production.**

Has wind and solar energy production increased in the past 10 years?

Which states renewable energy growth rates are increasing at a higher rate?

What are common words used in articles from the https://www.greenpeace.org/ website?

**Data Science tasks**

Find current growth areas in renewable energy in the United States.

Find areas where there is potential for renewable energy growth in the United States.

Analyze were based on the population the greatest benefits for new renewable energy exist.

**Analyze text in articles to find the common theme in renewable energy Data.**

The current data source that I have is more than 33k records containing data from 50 states and 2 territories with data from 2011 to 2019. I will do a web scrape on twitter to see and comments on renewable energy. The data contains summary data with 87 different columns which I will summarize or remove columns if they do not add value.

# Github Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Section 1** | **Section 2** | **Function** | **File** | **Description** |
| 1 | 1 | Create Source Table | Electricity\_Net\_Metering\_by\_Utility\_in\_US.csv | Primary Data source for project |
| 1 | 2 | Create Source Table | Create table from csv.sql | Create table from csv file Electricity\_Net\_Metering\_by\_Utility\_in\_US.csv by state providing energy usage by state table Renew Database table "Renew"."Util\_Energy" |
| 2 | 1 | Create Source Table | USPopulation.sql | Create table from csv file USPopulation.csv with population count by state |
| 2 | 2 | Source Data File | USPopulation.csv | Create tables for Wind Solar and US Population |
| 3 | 1 | Create Clean Table | insert soldback solar data.txt | Create table from csv file SolarPotential.csv with solar potential count by state |
| 3 | 2 | Source Data File | SolarPotential.csv | Create tables for Wind Solar and US Population |
| 3 | 3 | Create Source Table | SolarPotential Table.sql | Create tables for Wind Solar and US Population |
| 4 | 1 | Create Source Table | insert wind data .sql | Create table from csv file WindPotential.csv with wind potential count by state |
| 4 | 2 | Source Data File | Wind potential source | Create Wind potential source |
| 4 | 3 | Source Data File | WindPotential.csv | Create tables for Wind Solar and US Population |
| 4 | 4 | Create Clean Table | WindPotential.sql | Create tables for Wind Solar and US Population |
| 5 | 1 | Create Clean Table | create table summary.sql | Data Scripts With Summary Data for Reporting |
| 6 | 1 | Create Clean Table | Compare Potential to Actual.sql | Create tables for Wind Solar and US Population |
| 7 | 1 | Create Clean Table | Query File Wind Solar Data.sql | Renew Database table "Renew"."Util\_Energy" |
| 9 | 1 | Tableau Report Data | Presentation Data | Tableau Report Story Wind and Solar |
| 10 | 1 | Output Data File | Compare Actual to Potential.csv | Combined Potential Compared to Actual |
| 10 | 2 | Output Data File | Compare Actual to Potential33.csv | Updated Data source files |
| 10 | 3 | Output Data File | Wind Potential by State.csv | Wind potential by State |
| 11 | 1 | Output Data File | WindAndSolar33.csv | Updated Data source files |
| 12 | 1 | Python Script | Greenpeace\_SpacyWordMap.py | Add files via upload |
| 13 | 1 | Rmarkdown Script | Solar and Wind by state.Rmd | R Markdown Scripts using R Studio |
| 14 | 1 | Rmarkdown Script | timeserieswindsolar.Rmd | R Markdown Scripts using R Studio |

References:

[Wind generation potential in the United States - Wikipedia](https://en.wikipedia.org/wiki/Wind_generation_potential_in_the_United_States#:~:text=Wind%20Capacity%20Potential%20and%20Annual%20Generation%20%20,%20%20272%20%2010%20more%20rows)

Sun Potential

[Comparison of Solar Power Potential by State (ne.gov)](https://neo.ne.gov/programs/stats/inf/201.htm)

[Electricity Net Metering by Utility in US | Colorado Information Marketplace | data.colorado.gov](https://data.colorado.gov/Energy/Electricity-Net-Metering-by-Utility-in-US/4jjg-g3yq)

[Homepage - U.S. Energy Information Administration (EIA)](https://www.eia.gov/)

[Form EIA-861M (formerly EIA-826) detailed data](https://www.eia.gov/electricity/data/eia861m/)