A Geospatial Exploration of Wind Energy in Brazil

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Abstract

Brazil is a country with large renewable energy potential. In this report, we explore the potential for wind energy in Brazil. Using the tools of geospatial data science, we connect meteorological, demographic, topological, and infrastructure data to better understand this potential. We find that wind energy is a viable option for Brazil, and that the country has the potential to become a world leader in wind energy production.

Introduction

Wind energy is a renewable energy source that has been growing in popularity in recent years.

Literature Review

Zhang, Miller-Hooks, and Denny (2015) Abdalla et al. (2022) write something here. Yu, Sützl, and Van Reeuwijk (2022) is cool as well. Winkler and Klaas (2012) can't go without mentioning (Ulak et al. (2019)).

Wind Energy

Wind energy is a renewable energy source that has been growing in popularity in recent years. There are many reasons for this growth. Part of it is the exsitance of large investments funds such as Copenhagen Infrastructure Partners (CIP), which has invested in wind energy projects in Brazil. Another reason is the increasing efficiency of wind turbines, which has made wind energy more economically viable. Finally, the increasing concern about climate change has led to a push for renewable energy sources, such as wind energy.

Brazil

Brazil is a country with large renewable energy potential. It has a large coastline, which makes it a good candidate for offshore wind energy. It also has a large land area, which

makes it a good candidate for onshore wind energy. Finally, it has a large population, which makes it a good candidate for wind energy.

Political and economic factors does complicate the situation. Brazil has a history of political instability, which makes it difficult to invest in long-term projects. In addition, Brazil is quite polarized politically, with recent administrations being anti-environmentalist. Finally, Brazil has a history of corruption, which makes it difficult to invest in long-term projects; complicated legal systems; and a lack of transparency.

However, Brazil is in many ways also on the forefront of environmentalism, having played an important role in the Paris Agreement and having a large renewable energy sector. Al Gore has called Brazil "a leader in the global effort to combat climate change". Alfredo Sirkis, a Brazilian politician and environmentalist, has called Brazil "the most important country in the world for the future of the environment".

Data

something

Meterelogical

something

Demographic

something

Topological

something

Infrastructure

something

Methodology

Data Preprocessing

Exploratory Data Analysis

Model Selection

Model Evaluation

Results

Discussion

Conclusion

References

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Appendix