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INTRODUCTION

With many major cities making a shift towards renewable energy in the coming years, as the effects of climate change become worse and worse, it is important to look at the proposals of our elected officials and see how they have been implemented in other areas. This gradual movement away from fossil fuels can be handled in a variety of ways, so seeing what options make the most sense for a given area is an important task.

OBJECTIVES

The objectives of this project are to look into how officials in the Cleveland area are handling the renewable energy situation and what the benefits and possible drawbacks may be for the types of areas they'll be implemented in.

METHODS

- Contact government officials within Cleveland
 - The mayor, Councilman representing the area of CSU, and Chair of the Committee on Development, Planning & Sustainability
- If no response, look through official statements or interviews for plans on the environment
- Research how similar plans have been implemented in areas like Cleveland (large, urban cities, near a lake)

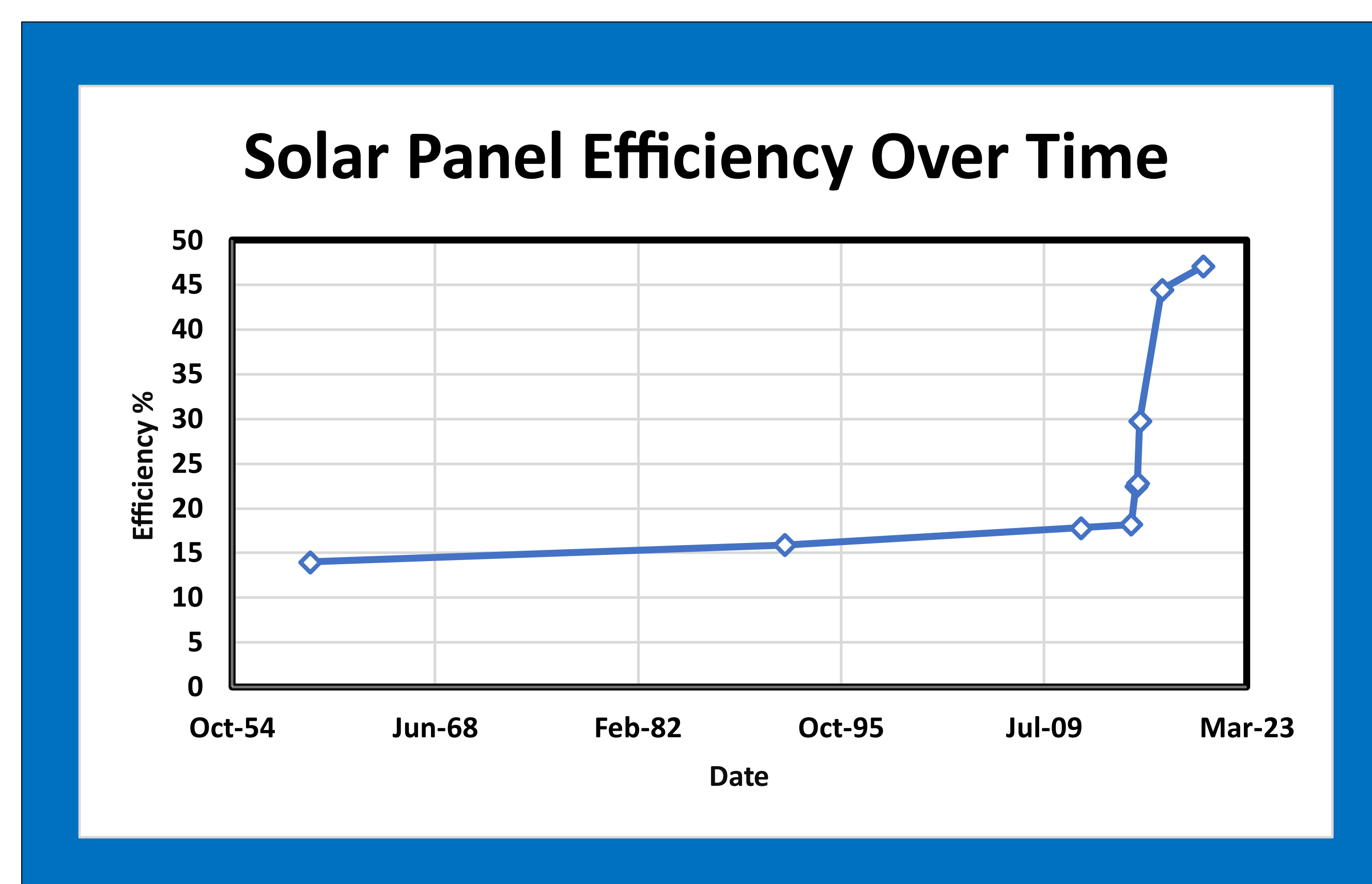


Figure 1. A graph showing the increase in efficiency for Solar Panels over time. As you can see, it follows an S-curve shape.

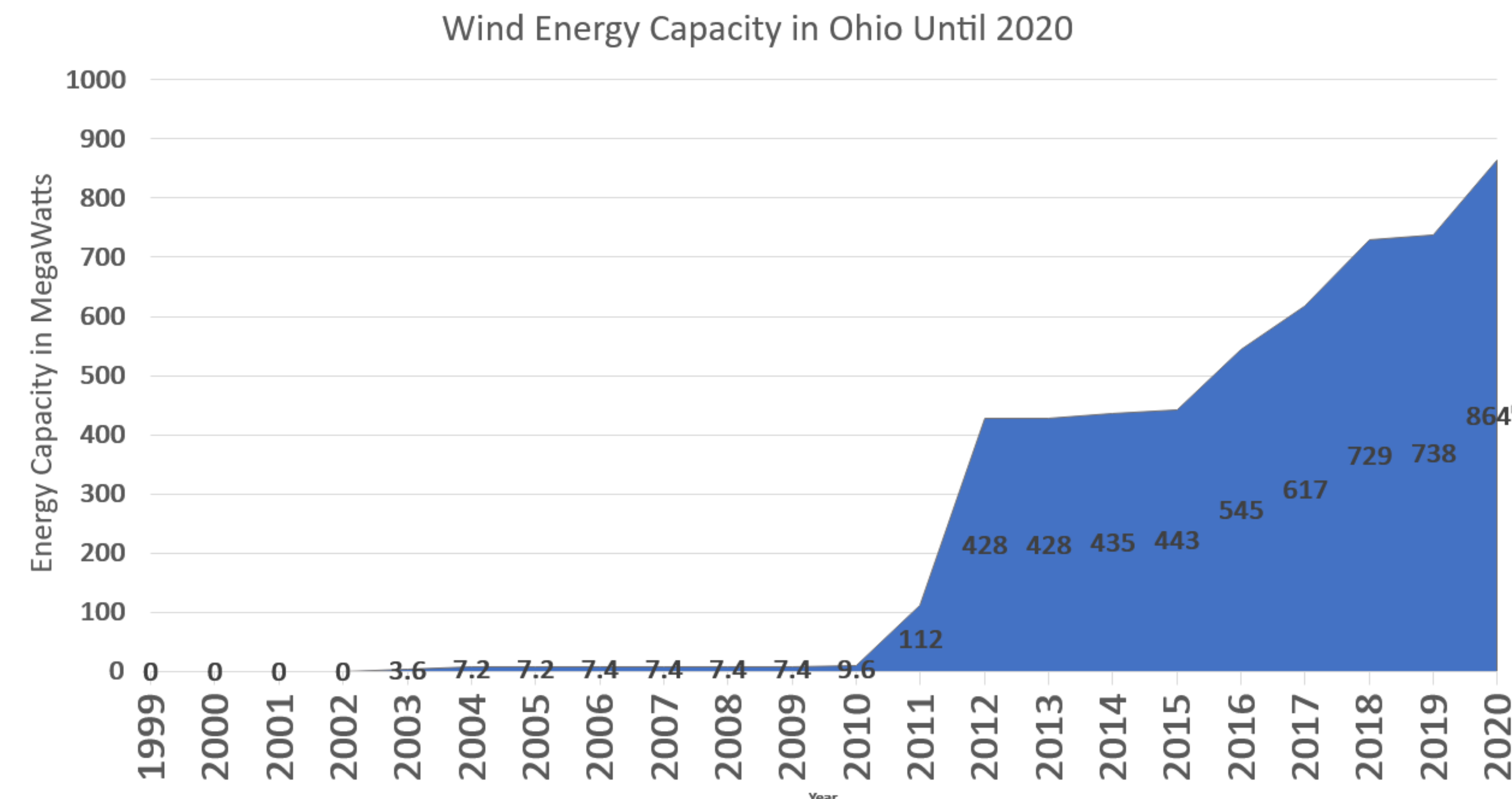


Figure 2. A graph showing the rise of Wind Energy Capacity in Ohio from 1999 to 2020.

RESULTS

- Justin Bibb stated in a 2022 interview that wind, hydro, and solar are “a key part of our city's economic future”
 - He specifically mentioned community solar farms as an option
- Community Solar Farms require a number of solar panels in an open area; however, they can be beneficial to low-income neighborhoods
 - Difficult to find information on due to mostly being between companies and individuals, rather than governmental projects
- New York City boroughs have managed to install enough to be 1/3rd of the way to reaching 1 GW of Solar Power (equivalent to 33 million LED A19 lamps)
- A study in Iowa found an acre of Solar panels produces almost 200 MWh per year (enough to power an EV to drive from NYC to LA and back over 120 times)
- Wind Project Ice Breaker, a plan that is aiming to bring wind turbines to Lake Erie. After clearing legal hurdles, the project is seeking a developer to make it a reality. The project is not without criticism. The Lake Erie foundation is concerned that the wind turbines could cause harm to birds that are migrating.

CONCLUSIONS

While it's clear that Solar energy may be stagnating in increased efficiency, the path of community solar farms is still a great option for the communities of Cleveland. While the main drawback may be the requirement of a large, open area, other larger cities have been able to accomplish this task, although this may require cooperation with other areas within the state.

In addition, wind power and wind turbines provide an excellent source of renewable energy, given the location of Lake Erie. However, steps must be taken to ensure that local ecosystems are not disrupted by their construction.

Overall, the Cleveland government's plans for renewable energy seem to take into account the needs of the citizens while also taking advantage of some of the city's geographic features.

FUTURE WORK

Were this research to continue further, we would most likely reach out to companies involved in the process of constructing renewable energy infrastructure as well as those that work directly with governments to influence policy decisions.

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