

A landscape photograph featuring a wind farm. The foreground is filled with dark, jagged rocks and patches of low-lying vegetation. In the middle ground, several tall, white, cylindrical wind turbine towers stand in a line across a flat, brownish field. The background shows a range of low, blue mountains under a cloudy, overcast sky. The text "Wonderous Wind Power" is overlaid in a purple, cursive font across the center of the image.

Wonderous Wind Power

Introduction

Our challenge is to fix the problem of birds and bats being killed by wind turbines.

We hope you can understand how we can solve this problem. We have learned a lot from our research and we know how important this is to our world. There are about 48,000 wind turbines from coast to coast.

We are using wind turbines because they are a well proven and cost-effective method of renewable energy production. The turbines can be placed in remote locations, and we can make electricity.

Description of Our plan

Originally, our team came up with the following ideas to make wind turbines safer for wildlife:

1. Pumping a bad smell out towards the turbines
2. Sonar
3. Putting lights on the blades
4. A net around the turbine farm
5. Radar that can track the birds and bats

Our Ideas and Why They Don't Work

Netting around the turbine farm: The turbine net didn't work because the birds and bats could get caught in the net, resulting in injury or death.

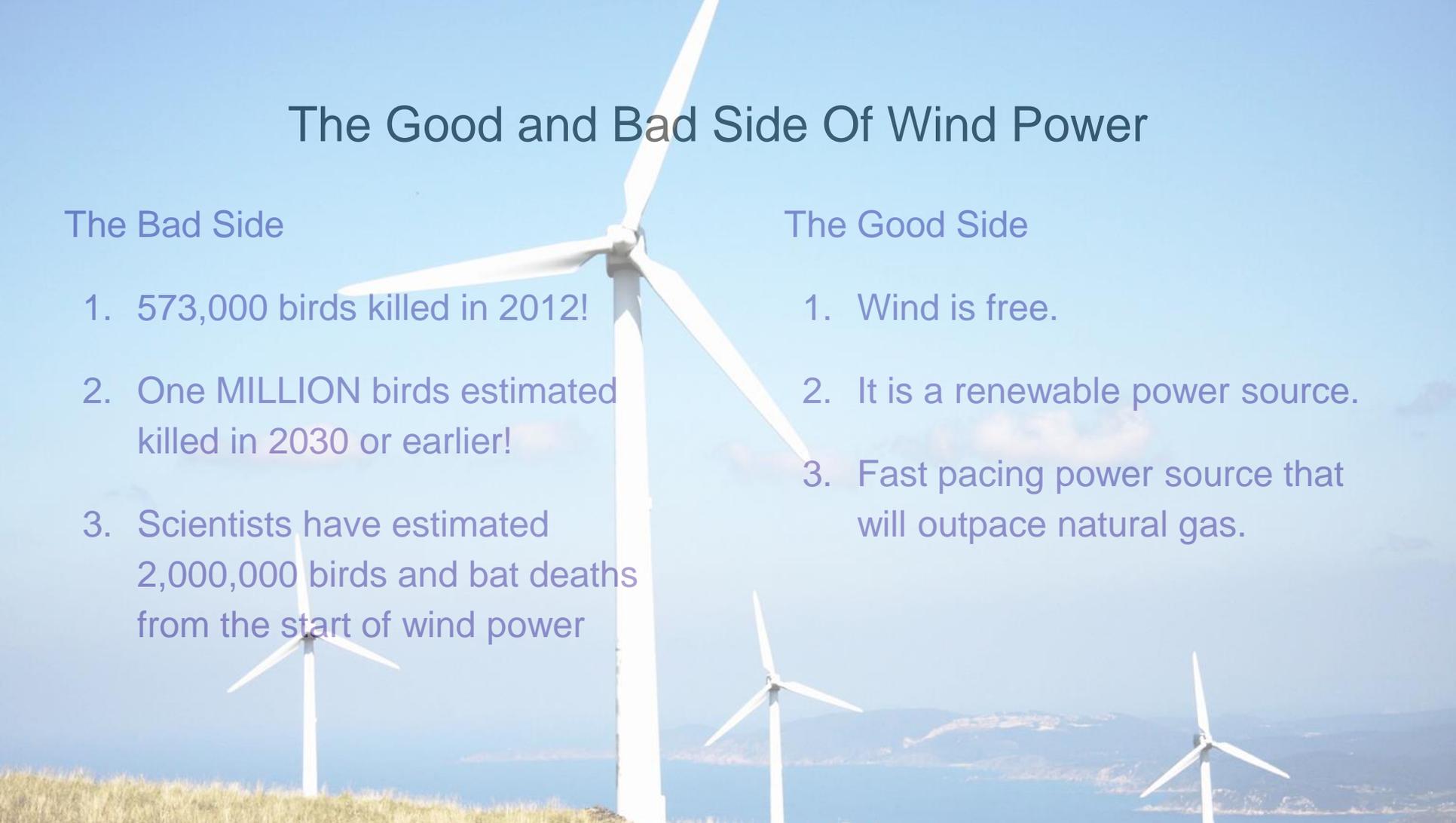
Smell: Wouldn't work because it is against the law to harm a bird or bat.

The lights: They weren't very effective on the birds because they fly in the daytime, or the bats because they use echolocation, and the eagles won't see them because they look down, not ahead.

Sonar: The sonar won't work, but sonic boom boxes would. They use ultrasonic acoustics, emit continuous high frequency from 10 kHz to 100 kHz.

Radar: Our radar idea did not work because the company would have to slow the turbines down too often.

The Good and Bad Side Of Wind Power



The Bad Side

1. 573,000 birds killed in 2012!
2. One MILLION birds estimated killed in 2030 or earlier!
3. Scientists have estimated 2,000,000 birds and bat deaths from the start of wind power

The Good Side

1. Wind is free.
2. It is a renewable power source.
3. Fast pacing power source that will outpace natural gas.

The Vortex Wind Turbine

In our research, we found a company called Vortex Bladeless, that could be the answer to a lot of our problems with birds and bats. The Vortex oscillates, or sways to collect the power from the wind. It doesn't have any moving parts in contact, so it reduces the maintenance costs by 80%. It uses 30 gallons of oil in a year instead of 150. This is the future of wind farms. The vortex wind turbine does not kill any birds unlike other wind turbines. These can soon go on the roof of houses too. We are working on getting some on our campus too. The Vortex Wind Turbine will be put in very remote places in 2016-2017. The foundation of the vortex is 50% smaller than conventional wind turbines.

Conclusion

We found out that other wind turbine companies are already trying some of our big ideas. We learned that using a conventional wind turbine was not the only answer and scientists are already working on other ways to make power. We found out that another company called Vortex Bladeless is working on a wind turbine that does not cause any damage to wildlife. We presented at our school's Building and Ground meeting and educated the committee members on Vortex. All of the committee members were very excited, and asked us to set up another Skype session with Vortex Bladeless to discuss getting some of their wind turbines on our campus.

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