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Catching the Wind

As a resident of Casper, Wyoming, I am writing an article that will appear in the *Casper Star-Tribune*. I am arguing that wind power will benefit the economy and environment, and I will defend against criticisms of the turbines. My audience will be the readers of the *Casper Star-Tribune*, which is a newspaper distributed throughout the state. The residents of Wyoming have mixed feelings on the topic, as some support wind turbines, others don't have a firm opinion either way, and some oppose the construction of new turbines. My aim is to ultimately persuade the courts to allow proposed wind turbine sites to be built. I hope do this by gaining support from the majority of people in Wyoming and convincing critics to change their stance.

After living in Wyoming for many years, two things are apparent. First, the natural beauty is unmatched. We all love the views of the mountains and streams. Most residents agree that Wyoming's lack of man-made structures is part of the state's identity. It is our responsibility to maintain this environment. As one might expect, some residents have expressed sour feelings to the large, unnatural wind turbines springing up in various parts of Wyoming. These wind turbines have been criticized for multiple reasons. Opponents point out that they are expensive to produce, kill birds, and are aesthetically displeasing. Critics, such as oil and gas businessman, Diemer True, have managed to delay various wind turbine projects ("Group"). If wind turbines do have these negative consequences, why is there any debate on the topic in the first place? The answer is found in the second thing that is apparent in Wyoming. There is wind… lot's of wind. The wind has prevented each of us from shutting our car doors on multiple occasions. The wind has stolen papers right out of our hands. The wind has even ruined our summer barbecues. It seems to be the one detractor from an otherwise gorgeous state. While the wind may be a nuisance, it is also one of our most abundant natural resources. The

key to harnessing this resource is using wind turbines, which are environmentally clean, have low costs to maintain, and reduce our dependence on foreign oil. I have considered the arguments for and against the construction of wind turbines in Wyoming. The views of the opposition do have some foundation. However, the benefits of the installation of wind turbines outweigh the negatives.

One of main benefits of wind energy is that is lowers our dependence on foreign sources of energy. John Corra, the director of the Wyoming Department of Environmental Quality, points out that the cost of foreign fuel continually increases as the demand rises and the sources are exhausted. Populations and economies have boomed in certain areas, such as India and China. As their standard of living and populations rise, so does their need for fuel. With the demand increasing so rapidly, the U.S. cannot continue to rely on foreign, exhaustible resources. We must be proactive in finding solutions to the problem, and wind energy, which is one hundred percent renewable and homegrown, is one answer (Noble). Some say that the issue of foreign dependence does not pertain to Wyoming, because we produce much of our own energy with resources such as the Powder River Coal Basin. It is true that much of our energy is from our own land and supports our own economy. Coal currently generates 91.4% of the electricity used in Wyoming (IER). Coal has been a blessing to our state, and I admit that it is a reliable source of energy. However, there is only so much coal to be mined, and eventually this resource will be exhausted. That will be 91.4% of our electricity that is no longer available. As mentioned, rather than waiting until it's an emergency, we must be proactive in finding renewable energy sources. While the non-stop wind is annoying, the fact that the wind is inexhaustible makes it a valuable resource. If we begin to produce more energy through wind power, the issue with reliance on foreign fuel sources will not be an issue in the future.

Considering that the wind has never stopped before, we can count on the wind to ensure that we don't have any such problem.

Another area in which we must be proactive is the protection of the environment. As Wyoming residents, our love of natural beauty creates a need to protect the environment, and supporting wind energy is a great way to go about doing so. As I already mentioned, wind energy is one hundred percent renewable. Along with this positive aspect, wind energy is one hundred percent clean and harmless to air quality (Noble). Critics will point out that the turbine manufacturing process creates some air pollution. This is true, but the same can be said for the production of the equipment used to harness other forms of energy, such as coal or natural gas. The important aspect is that once constructed, the wind turbines will supply energy without air pollution for the thirty years that each is in use (Wilburn 5). The current wind turbines installed in Wyoming avoid 2.8 million metric tons of carbon dioxide annually (AWEA). The already significant reduction in greenhouse gas emissions can only be bettered by the installation of new turbines. The lack of air pollution created by turbines will allow us to enjoy the Wyoming nature for years to come.

Just as the wind turbines are good for the Wyoming air, they protect our fresh water as well. Water is important for Wyoming residents, as it provides clean drinking water and a source of entertainment. Each summer, it seems that the entire town of Casper flocks to either Alcova Lake for recreation or to the North Platte River for the excellent fishing. We must make efforts to conserve this part of our state. While some energy sources pollute our beautiful bodies of water, wind turbines do not. Wind turbines, unlike conventional energy sources, do not produce emissions and therefore do not contribute to mercury contamination of fresh water (windustry). Not only does the wind energy prevent the water from becoming polluted, it conserves the water

itself. Coal, the current leading energy source for Wyoming, can take up to five hundred times more water than wind turbines to produce the same amount of electricity (windustry). I, like most, would like to see the Wyoming water remain clean, and wind appears to be a way to ensure this.

The benefits to the air and the water are matched by the benefits for the land. Critics say that the turbines cover large areas of land. While wind farms can cover multiple acres, the actual footprint of the turbines is small. The large majority of the land on the wind farms remains usable for agriculture (Jakle 15). With proper planning, wind turbines can be arranged so that they are a minimal problem for farmers. Other sources of energy require the complete destruction of any potential for agricultural usage. For example, the Conoco fields in West Casper covered many acres of land, preventing any use besides that of producing oil. These fields polluted the soil and turned the area into a barren wasteland. The wind turbines require no such transformation. With these considerations, it seems that new wind turbines will benefit the land. From the air, to the land, to the water, the installation of wind turbines will clearly be a benefit to the environment.

For those who look beyond the environment, wind turbines also have economic benefits. One such benefit is the revitalization of rural economies. While diversifying these economies, wind energy adds to the tax base and provides new jobs. In Minnesota, for example, wind energy has produced $1 million per year in property tax for each 100 megawatts of development (windustry). The wind industry also creates thirty percent more jobs than a coal plant per unit of energy generated (windustry). These jobs include surveyors, engineers, and technicians, only to name a few. Once a turbine has started to run, four to eight jobs are created per one hundred megawatts of installed capacity (Jakle 20). In addition, the wind industry requires fewer

subsidies. Renewable energy overall has received fewer than $30 billion in subsidies in the last thirty years, while conventional energy receives $300 billion per year (windustry). Significantly less taxpayer money is needed to support wind energy. A final economic benefit is the elimination of mining and transportation, which are two expensive aspects to conventional energy. Wind energy generates electricity at the source of fuel, which allows for efficiency and reduces unneeded costs. With the benefits that wind energy has on the economy, it is fair to state that wind energy goes beyond environmental friendliness.

While the turbines have many benefits, critics tend to focus on the disadvantages to wind energy. I agree that there are negatives to wind energy production, but these do not come close to outweighing the benefits. One of the disadvantages is that wind is a variable resource. This means that wind turbines only produce energy when the wind is blowing. D. Roberson believes wind is unreliable and "other generators will continue to be needed to back up the wildly variable output of wind turbines." I agree that this is a deficiency in the case for wind energy, but I don't believe this is much of an issue in Wyoming. To illustrate my point, Flat Creek Rim, between Laramie and Rawlins, has exceptional potential for wind energy. The average wind speeds are 25 mph, which is up to seventy percent faster than other good wind sites around the world (Bureau). In Casper, has there ever been a day without wind? A few years ago, there was one such day, and I remember people taking pictures of still flags because it was so unusual. The inability to predict when and if the wind will blow may cause problems in some areas, but this is not the case in Wyoming.

Another criticism of wind energy is that the turbines are aesthetically displeasing. While this has become the key factor that has delayed many projects, the aesthetics should not prevent turbines from being built. Although I disagree with the critics who find the appearance of

turbines to be unpleasant, I am not arguing that the turbines are beautiful. I am simply suggesting that the aesthetic appearance of the turbines is not a significant issue. To illustrate this, one site that is planned for wind turbines is south of Glenrock. We have all driven south on Interstate 25 toward Cheyenne. All I have ever seen in the area south of Glenrock are open fields with a few hills. If the wind turbines were in a populated area blocking the gorgeous views of the mountains, I would be on the side of the critics. However, how much are the turbines going to detract from the scenery when all there is for miles is dry grass? Regardless of whether they are art or horrid, the turbines detract minimally from such scenery. On top of that, people will hardly have to look at the turbines. For people driving on the highway, turbines will pass from the view in minutes. As for the residents of the area, there are only a few scattered buildings in the large space south of Glenrock. The turbines are planned for undeveloped areas, out of the site of the large majority of people. With all things considered, the wind turbines do not seem to detract enough, if at all, from the scenery to justify preventing the production of wind energy sites.

To add to the criticism, some say that the turbines cast an unwanted shadow as well, known as shadow flicker, but this is far from a legitimate reason to prevent new wind energy sites. Research has shown that in the worst-case scenario this happens for only one hundred minutes a year (windustry). The National Association of Regulatory Utility Commissioners believes that “It is a simple matter to calculate the precise locations and maximum annual duration of shadow-flicker effects” (9). With that in mind, the issue seems simple to resolve, and shadow-flicker is not a serious conflict for wind energy.

A more serious consequence of wind turbines is the negative effects that they have on some animals. While these effects are undesirable, many of the issues can be prevented and do

not outweigh the benefits turbines have on the overall animal population. One issue is that the turbines allow a high perch for predators such as hawks and eagles (Corra). The predators prey on sage grouse, which is a near endangered species. This has grown to be an issue, as half the total sage grouse population inhabits Wyoming (NARUC 108). The simple answer to protecting the sage grouse is to place the turbines in areas where these animals do not populate. Many of the sites with the most potential for wind energy are also areas that will have minimal conflicts with the sage grouse population (Jakle 19). Adding to the wildlife issue, bird fatality is an unwanted consequence of wind turbines. Migratory birds and bats fly into the blades. Mark Duchamp believes this could cause the extinction of some bird species. Research is still being conducted, however, to determine if this is as large of an issue as Duchamp assumes (Corra). Even if this turns out to be a significant issue for various bird species, there are solutions. A brake in the turbines allows for them to be stopped during times of bird migration, significantly decreasing the fatalities. From a different perspective, wind turbines have positive effects on other species due to the environmental benefits to the air, land, and water. It must also be considered that wind turbines are not the only source of energy that harms wildlife. Mining and drilling for oil bring their own risks to animals. In energy production, John Corra states that there is no "free ride," and any form of production has some level of harm to wildlife. In the end, the turbines' effect on wildlife can be minimized and should not prevent future sites from being constructed.

Wind, as annoying as it is, can be an excellent source of energy in Wyoming. I admit that the argument for wind energy faces several challenges due to the negative consequences. These consequences, however, can be handled, and wind energy does provide tremendous benefits. Wind energy is environmentally friendly to the air, land, and water, and it protects the

natural beauty that we love. Also, wind turbines reduce the reliance on foreign sources of energy while providing economic benefits. Turbines enable us to harness this abundant resource, and we can finally make use out of the incredible Wyoming wind. With both sides of the issue considered, the positives of wind energy outweigh the negatives. The next time that you see the Wyoming flag waving uncontrollably in the wind, remember the potential for this resource and support the use of wind turbines.

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