

THE COST OF CLEAN ENERGY: WIND TURBINES IN MICHIGAN

In recent decades our nation has made a concerted effort, through research and legislation, to begin exploring the use of alternative forms of energy. The pollution caused by the burning of fossil fuels, specifically coal and natural gas, has led to the use of renewable energy sources as an option for clean, sustainable energy. One of these renewable energy sources that has generated a lot of government and business interest in the past five years is wind energy. Wind energy is a clean, renewable energy source that can be converted into electricity through the use of large wind turbines. Current policy at the state level has placed pressure on several states to begin producing electricity from renewable resources. This pressure has led to the increase in the number of wind farms we have seen over the past five years across the nation and abroad because of the relatively low cost and high output of the turbines. Currently, wind energy totals less than one percent of our country's energy supply. However, according to the National Renewable Energy Laboratory, wind energy generated from the turbines could supply up to twenty percent of the nation's electricity.¹

Michigan legislation, specifically Proposal Three, has placed a number on the amount of electricity that needs to be produced from renewable energy sources. The Proposal asserted that Michigan must begin to plan ways to generate electricity from clean renewable sources with the goal of generating twenty-five percent of the state's electricity from such sources by the year 2025.² Michigan Environmental Council President stated that this proposal will not only have a positive effect on Michigan's environment, but also on our economy. MEC President Chris Kolb stated, "Proposal 3 would help diversify the state's energy mix, stabilize electricity rates, and create in-state jobs that can't be outsourced."³ Legislation like this has led to the development of the wind industry in the state of Michigan. The first commercial wind turbine erected in the state of Michigan was placed in Traverse City in 1996.⁴ As of January 2014, there were six-hundred and seventy-six wind turbines in the state of Michigan with the capacity to produce one-thousand one-hundred and sixty-one megawatts of electricity.⁵ This is an impressive number when we consider that a single megawatt wind turbine generates enough electricity annually to power four-hundred homes or more.⁶

¹ Tradewind Energy Incorporated. "FAQ". http://www.tradewindenergy.com/windlibrary_sub.aspx?id=136. 2013.

² Martin R. Cohen. "Report: Proposal 3 will Reduce Energy Costs for Michigan Ratepayers". <http://www.environmentalcouncil.org/newsroom/pressRelease.php?x=96>. 2012.

³ Ibid.

⁴ Glen Pruitt. "Traverse City's Utility Goes Greener". Michigan Land Use Institute. May 2009.

⁵ Michigan Department of Licensing and Regulatory Affairs. "Michigan Utility Scale Wind Farms". December 2013.

⁶ Tradewind Energy Incorporated. "FAQ". http://www.tradewindenergy.com/windlibrary_sub.aspx?id=136. 2013.

While the idea of clean energy and renewable resources seems to be a foolproof plan, many residents who live near wind farms complain of the adverse health effects associated with the turbines. Specifically, the noise generated by the machines which has been linked to sleep deprivation and increase in stress hormones which both can lead to more complicated health risks. The public opinion on the benefits and disadvantages of the wind farms varies from extreme opposition to acceptance and the middle ground which has been labeled as a “not in my backyard” stance. Professor Peggy Hall of The Ohio State University categorized the possibilities for opposition to wind farms into three categories. First being, the anticipated effects on: wildlife and the environment, health and safety of those living around them, property value, and economic impact. Secondly, Hall cited fairness of development as an issue that may arise in opposition to the creation of wind farms. This includes the belief or suspicion that outside interests and businesses are profiting more so than the local community which houses the turbines. Third, the values and beliefs of a community of people help to create an opposition or support for the use of wind energy.⁷ The fast development of the wind industry in Michigan has led to an uprising of opposition groups that are questioning the effects that these turbines have not only on the environment, including bird populations, but also on the humans who live near the machines. Skeptics claim that there has not been enough research into the health risks involved with housing people near the wind turbines. These skeptics cite the greed of large engineering companies as the driving force behind the massive increase in wind turbines in Michigan. We have to ask ourselves, at what risk are we putting our environment, ourselves, and those around us by placing these huge machines in the natural habitats of animals and humans.

In an effort to explore the effects of wind turbines and the local opinion of those who live around them I would like to focus my research on the thumb area of Michigan which is home to a growing population of wind farms. Through my research I hope to uncover some of the truths behind the pros and cons of producing wind energy through the use of wind turbines. I find it interesting that the wealth of information available only cites the positives of the energy source with little voice given to the people who are forced to live next to the large machines. Do these machines present health risks to animals, such as birds in the area? Do they present health risks to humans living near them? How do the impact the environment around them? At what cost are we willing to continue producing wind turbines as an alternative to coal and natural gas?

⁷ Kurt H. Schindler. “Not all proposed large wind energy farms are controversial and there may be reasons why: Part one”. Michigan State University Extension. Jan. 2014.