

Offshore Wind Farms: The Environmental Impact

Throughout the world, new technological advances are being introduced in order to better serve our environment in a “green” fashion. The use of old technology combined with new technology, has spurred a new way in clean energy, through wind turbines. As people drive through mid-Michigan, especially along the M-46 corridor, you will notice the mass amounts of the new wind turbines, created to give clean and efficient energy. These wind fields give Michigan a new way of producing energy and decreasing the carbon footprint of energy produced by coal. In a time where global warming and the carbon footprint needs to be reduced to ensure the environment sustainability; this old but new way of producing clean energy has been met with a positive alternative to coal, natural gas and oil. With successful adaptation to wind power throughout Michigan; Michigan’s government is looking to expand this technology into other areas. The area in which Michigan wants to develop this technology is in the great lakes. Creating offshore wind farms offers clean energy but at what impact on the environment and marine life will it have?¹ The effect of offshore wind farms could have great impact on the carbon footprint. Although the advantages of having clean energy, the effects the offshore wind farms have on migration patterns of birds and the impact on marine life in the Great Lakes could potentially be harmfully affected.

Offshore wind fields along the coasts of Michigan has been a debatable issue over the past few years. With the Great Lakes, Michigan could tap into the increase support for offshore wind fields, but at what cost does this newly recognized source of clean energy have to our environment within the Great Lakes. To understand the impact of the wind fields, you have to look at other areas that have already established these means of clean energy. Denmark holds two of the largest offshore wind fields, Horns Rev and Nysted. The document, *Offshore Wind Farms and the Environment: Danish Experiences from Horns Rev and Nysted*,² details the effects the wind fields have had on the marine life and bird migration patterns since its installation in 1997. As the document states “There are significant benefits to be had from offshore wind farms in the form of mitigating climate change, securing energy supply, decoupling economic growth from resource use and creating jobs. On the other hand they also have an impact on the surroundings in terms of visual intrusion, noise and impacts on nature.”³ Even though there are other extents in which offshore wind farms have, the focus is on how they affect nature and its environment. As the Danish Energy Authority discusses the negative effects offshore wind farms have on the environment:

¹ Scandia Wind Offshore LLC, *The Aegir Project Proposal*, email message to Mr. Michael G. Schneider, Chairman of the Board, Mason County Board of Commissioners, and Mr. Larry VanSickle, Chairman of the Board, Oceana County Board of Commissioners, March 2, 2010.

² Danish Energy Authority, *Offshore Wind Farms and the Environment Danish Experience from Horns Rev and Nysted*, November 2006, ed. Steffen Nielsen, http://www.scandiawind.com/images/danish_dong_enviro_2006_report.pdf, 1-42.

³ Danish Energy Authority, *Offshore Wind Farms*, 3.

The description of the environmental consequences must cover fauna and flora, seabed conditions, water, air, climate conditions, archaeological remains, impact on the landscape and coastal safety. The EIA (Environmental Impact Assessments) report must also demonstrate how any damaging environmental impacts can be reduced or compensated and indicate possible alternative locations for the installations.⁴

Which also shows that everything must be considered, including averting and finding alternate areas in which offshore wind farms are located. Turning back to the issue in the great lakes, research and planning of offshore wind fields must be a priority and must consider all avenues to enhance clean energy while balancing it without disrupting the natural habitat by anchoring turbines in the water, and the interference of bird migration patterns.

With the process underway in Michigan, the Institute of Fisheries Research committee has come up with a list of most favorable areas in which these offshore wind fields would be most viable; Berrien, Central Huron, Central Superior, and Sanilac.⁵ These areas might be optimal areas for energy created by wind, but the effects on the environmental aspect is lacking. The question whether or not the technology of wind turbines in the Great Lakes is an enhancement to the environment or the altered terrain created by offshore wind fields would greatly alter the species who live in the lakes and fly over them.

Bibliography

Danish Energy Authority, Offshore Wind Farms and the Environment Danish Experience from Horns Rev and Nysted, November 2006, ed. Steffen Nielsen, http://www.scandiawind.com/images/danish_dong_enviro_2006_report.pdf, 1-42.

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Pacheco, Liz, Michigan may harness offshore wind if lame duck lawmakers act, Great Lakes Echo, Nov. 23, 2010, <http://greatlakesecho.org/2010/11/23/michigan-may-harness-offshore-wind-if-lame-duck-lawmakers-act/>

⁴ Danish Energy Authority, Offshore Wind Farms, 12.

⁵ Liz Pacheco, *Michigan may harness offshore wind if lame duck lawmakers act*, Great Lakes Echo, Nov. 23, 2010, <http://greatlakesecho.org/2010/11/23/michigan-may-harness-offshore-wind-if-lame-duck-lawmakers-act/>.