

January 13, 2014

Comments on Tybee Island E-3120 Turbine

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Dear Councilman Wolff,

The Southern Alliance for Clean Energy is a regional organization that promotes responsible energy choices that create global warming solutions and ensure clean, safe and healthy communities throughout the Southeast. We appreciate the opportunity to provide comments regarding the Tybee Turbine.

SACE would like to commend the Council and Mayor Buelterman for hosting this discussion, which builds upon the Tybee Island Wind Power Resolution, passed in February 2012. We are in full agreement with your resolution, which stated that, among other things, the City supports the development of renewable energy resources, particularly onshore and offshore wind, insofar as wind is a domestic source of energy, is shielded from foreign interests, that it represents one of the largest, cheapest sources of power that poses no significant harm to the environment, and that wind energy projects offer stable electricity prices over many years. The resolution proved to be landmark for the region and since its passage, many communities have followed Tybee's footsteps and passed similar resolutions or proclamations, including the Georgia State Senate and the cities of Charleston, North Charleston and North Myrtle Beach, South Carolina.

The small-scale wind turbine we are discussing this evening represents the next step forward for Tybee Island and for the region. SACE is encouraging the Tybee Island City Council and Mayor to take advantage of the benefits of wind energy. With a new wind turbine, Tybee Island can reduce its power bills, encourage turbine tourism and promote environmental stewardship.

Free, Top-of-the-Line Turbine

The Endurance 3120 turbine, which has been given to the City of Tybee Island for free, represents one of the top-of-the-line small-scale wind turbines commercially available today. Its reliability, safety, sound levels and other metrics have recently been certified by the Small Wind Certification Council,¹ an independent, third party certification organization. This certification can provide Tybee Island peace of mind that this turbine is designed to function as advertised.

Reduced City Costs

The Tybee Turbine could generate more than 170,000-kilowatt hours of electricity annually. To put that in perspective, that amount of electricity could power about 17 average homes annually according to Environmental Protection Agency figures.² Because the turbine has been provided for free, and the city only has to cover installation costs, the turbine is extremely likely to pay for itself and cut city government's power bill.

The turbine could also supply cost effective electricity during the summertime at times of high electrical demand. A recent report published by the Southern Alliance for Clean Energy shows that Georgia's offshore and coastal wind resources are positively correlated with peak electricity demand hours in June, July, and August—or rather, the wind blows the hardest when we need the electricity the most.³ This is due to the sea breeze effect, a natural phenomenon that occurs in coastal areas when cool ocean air rushes inland to replace the warmer air that is rising. This effect is prominent during hot summer afternoons, when air conditioning units are usually turned on high. While utilities and their ratepayers often pay a premium for peak power during high demand hours, the sea breeze effect could allow reliable offshore and nearshore wind power to offset conventional, expensive peak power generation.

Increased Tourism

With eco-tourism on the rise, the Tybee Turbine could become a thriving tourist attraction. Case studies from around the Southeastern region have proven that small-scale wind turbines can offer economic and educational opportunities to the surrounding community. The Hilton Hotel in Ft. Lauderdale, Florida⁴ recently installed six small wind turbines, and the local tourism bureau praised the hotel's effort. In North Myrtle Beach, South Carolina, wind turbines⁵ have been installed right beside the biggest downtown resorts and the City, the Chamber of Commerce, and the regional economic development council have partnered with other groups to make the city a "wind-powered economic zone" to attract tourists who want to stay in a renewable energy demonstration city. In North Carolina, the Outer Banks Brewing Station in Kill Devil Hills is the first wind-powered brewery in the United States⁶, providing a unique attraction for the town. The Tybee Turbine would be the first coastal wind turbine in Georgia and thus has great potential to become a popular tourist attraction.

Environmental Benefits

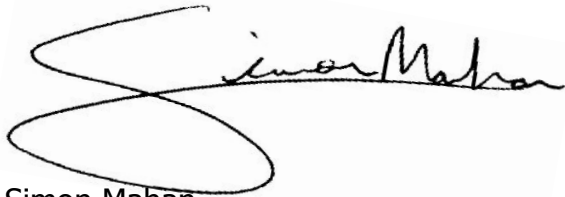
Wind turbines produce clean and inexhaustible electricity and help to offset health-harming pollution from fossil fuel power plants including mercury, NOx, SOx, and particulate matter. Furthermore, the installation of this single turbine is equivalent to avoiding the carbon dioxide emissions of 25 cars annually or offsetting as much carbon dioxide as 13,842 gallons of gasoline consumed.⁷ The wind is free fuel and does not require water or outside extraction processes to produce electricity.

Meanwhile, this single, small-scale wind turbine is unlikely to have significant adverse environmental impacts. Other nearby man-made structures, such as a communication tower, a water tower and the Tybee Island Lighthouse are of similar height and coexist with little indication of distress to the natural environment. Larger threats to birds exist

than this single wind turbine. According to a study published by the University of Georgia, estimates that nearly one billion birds may be killed annually in the United States by cats – representing a huge threat to bird populations several orders of magnitude greater than wind turbines.⁸ One of the biggest threats to Tybee Island's birds may be the number of annual fireworks shows. According to National Geographic, fireworks displays may kill thousands of birds in a single night⁹; which is likely to greatly outweigh any harm by a single turbine. In total, the Tybee Turbine's environmental benefits are very likely to outweigh potential impacts.

The Tybee Turbine would represent the city's commitment to providing a clean and healthy environment for the local community. The installation of this turbine would be a small, but important first step towards implementing the Tybee Island Wind Power Resolution from 2012 and would place Tybee Island at the front line of clean energy innovation in the state.

Sincerely,

A handwritten signature in black ink, appearing to read "Simon Mahan". The signature is fluid and cursive, with a large, stylized initial "S" that loops around the first part of the name.

Simon Mahan
Renewable Energy Manager
Southern Alliance for Clean Energy

¹ “SWCC Wind Turbine Power Performance Summary Report” Small Wind Certification Council

[<http://www.smallwindcertification.org/wp-content/new-uploads/2013/11/SPP-13-07-Summary-Report.pdf>]

² “Greenhouse Gas Equivalences Calculator” U.S. Environmental Protection Agency.

[<http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>]

³ Mahan, Simon (2013, August). “Georgia’s Offshore and Nearshore Wind Resource Coincidence with Electrical Demand Load.” Southern Alliance for Clean Energy

[<http://www.cleanenergy.org/wp-content/uploads/F-GA-Sea-Power-Report-8.7.13.pdf>]

⁴ Satchell, Arlene (2013, August 22). “Hilton Beach hotel to power up wind energy soon.” Sun Sentinel

http://articles.sun-sentinel.com/2013-08-22/business/fl-hilton-lauderdale-wind-turbines-update-20130821_1_wind-turbines-wind-energy-energy-conservation

⁵ Smith, Drew (2012, February 21). “North Myrtle Beach adds two wind turbines, expands research effort” SCnow

[http://www.scnow.com/news/local/article_ed4b19b4-8cbc-5101-ae69-a09e0b8e9a36.html]

⁶ “Wind Powered Brewery” Outer Banks Brewing Station OBX Restaurant and Brewery

[<http://www.obbrewing.com/wind-powered-brewery/>]

⁷ “Greenhouse Gas Equivalences Calculator” U.S. Environmental Protection Agency.

[<http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>]

⁸ Dauphine, Nico (2009, September 25). “The impact of free-ranging domestic cats on wildlife of the United States.” Warnell School Forestry and Natural Resources, University of Georgia

[http://www.abcbirds.org/abcprograms/policy/cats/pdf/impacts_of_free_ranging_domestic_cats.pdf]

⁹ Choi, Charles (2011, January 6) “Why are birds falling from the sky?” National Geographic News

[<http://news.nationalgeographic.com/news/2011/01/110106-birds-falling-from-sky-bird-deaths-arkansas-science/>]